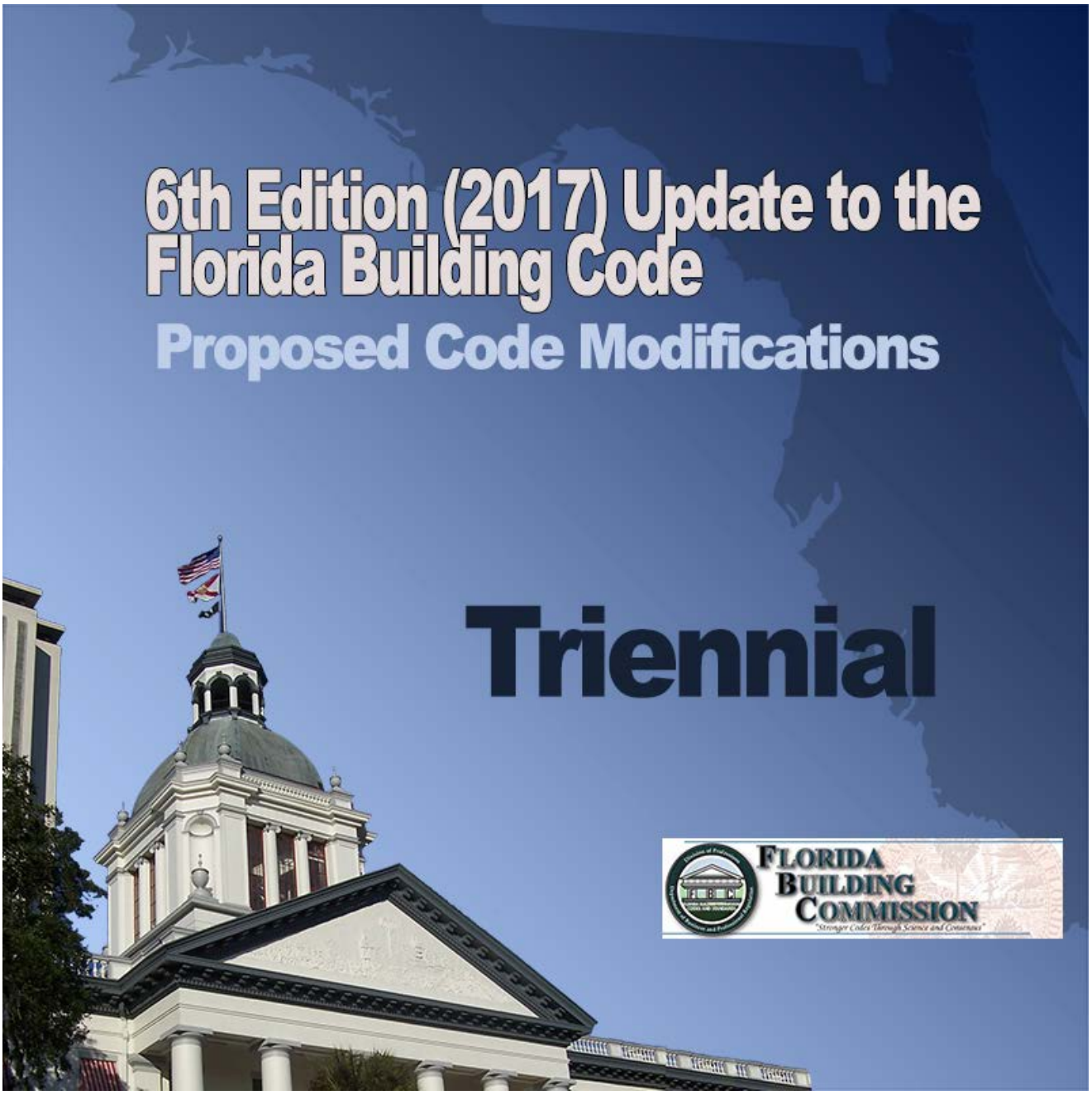

Swimming Pool

Proposed Code Modifications

Including Comments

This document created by the Florida Department of Business and Professional Regulation - 850-487-1824

TAC: Swimming Pool

Sub Code: Building

Total Mods for Swimming Pool: 27

Date Submitted	11/22/2015	**Section**	110.9	**Proponent**	Mo Madani
Chapter	1	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

6491, 6492, 6493, 6494, 6496

Summary of Modification

The proposed code change requires as part of the close out inspection ensuring that the existing swimming pool bonding system is complete and terminated properly.

Rationale

The proposed code change provides for provisions necessary to prevent electrocution in swimming pools. Also, see upleaded files.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Further enforcement/inspections would be necessary by the enforcement agencies to implement this prevision.

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

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Impact to industry relative to the cost of compliance with code

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Requirements

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

The proposed code change has the potential of reducing electrocution in swimming pools

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

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

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

The proposed code change does not discriminate against materials or products.

Does not degrade the effectiveness of the code

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

Is the proposed code modification part of a prior code version? No

Alternate Language

1st Comment Period History 01/13/2016 - 02/25/2016

6498-A3

Proponent Bryan Holland **Submitted** 2/22/2016 **Attachments** Yes

Rationale

I believe this clarifies the intent of the proposed modification to ensure the electrical safety requirements are installed or reconnected when an existing swimming pool is repaired or altered.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The proposed modification may require an additional inspection to be added to permits for swimming pool repair and alterations.

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

The proposed modification could increase the cost of compliance with the code while providing an additional level of safety following repairs and alterations to swimming pools.

Impact to industry relative to the cost of compliance with code

The proposed modification could increase the cost of compliance with the code while providing an additional level of safety following repairs and alterations to swimming pools.

Requirements

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

Yes. The proposed modification increases the health, safety, and welfare of the general public.

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

Yes. The proposed modification strengthens and improves the code.

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

No.

Does not degrade the effectiveness of the code

No.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW6498-G1

Proponent	Thomas Lasprogato	Submitted	2/3/2016	Attachments	No

Comment:

Neutral

1st Comment Period History 01/13/2016 - 02/25/2016

SW6498-G2

Proponent	Jennifer Hatfield	Submitted	2/25/2016	Attachments	No

Comment:

On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted:

1. In this proposal there is no specific text to review, so this proposal cannot be implemented or even properly addressed. There are no criteria as to nature of the inspection and/or tests, protocols, pass/fail criteria, enforcement and qualification strategies that are essential for effective implementation. The Committee needs to be aware that implementation of such a program can result in potentially significant costs for existing pools if demolition has to be done to allow the inspector access to pool and deck steel and other covered and inaccessible objects required to be inspected.

2. This proposal, if properly implemented, actually has the real potential of reducing risks. Pool shock incidents are associated with improper, poor defective, damaged or nonexistent bonding.

3. New Jersey has a bonding test program for non-residential pools. Effective implementation of such a program cannot be accomplished by a simple code proposal; a complete and comprehensive program must be developed.

Section 110 – Inspections

Section 110.9 Add to read as follows:

Section 110.9 Existing Swimming Pools – Electrical

Move the proposed modification from "110.9" to "110.3 Required Inspections, Electrical" and add the following:

4. Existing Swimming Pools. To be made after all repairs or alterations are complete, all required electrical equipment, GFCI protection, and equipotential bonding are in place.

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015 MEETING SUMMARY REPORT

WEDNESDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding swimming pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs voted unanimously to recommend the Commission approve the consensus package of recommendations from the TACs. The TACs' specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring

existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.

PROJECT OVERVIEW

The 2015 Florida Legislature identified the need to evaluate the electrical aspects of swimming pool safety focusing on minimizing electrocution risks linked to swimming pools. In response, the Florida Building Commission approved a research project (technical enrichment) for a *Swimming Pool Electrocution Prevention Study*. In order to implement the project the Commission convened a process to develop recommendations for pool safety focused on the prevention of electrocution in swimming pools. The Commission determined that the project would be evaluated and recommendations developed by convening concurrent meetings of the Commission's Swimming Pool Technical Advisory Committee and Electrical Technical Advisory Committee (TAC). The objective of the project is to evaluate key topical issues, and as appropriate develop code amendment proposals designed to minimize electrocution risks linked to swimming pools.

In response to the Commission's direction the Swimming Pool TAC and Electrical TAC agreed that the initial Phase I scope of the project is to determine whether to recommend a proposed code amendment that would require low voltage lighting in residential swimming pools for new construction. Once the Swimming Pool TAC and the Electrical TAC conclude their evaluation of low voltage lighting they will evaluate additional project relevant topics in Phase II of the project: specifically bonding, grounding, retrofitting of existing pools, and education.

AGENDA ITEM OUTCOMES

OPENING AND MEETING ATTENDANCE

The meeting was opened at 10:00 AM once a quorum was established for the Swimming Pool and Electrical TACs respectively, and the following members participated:

Swimming Pool TAC: James Batts (chair), Jordan Clarkson, Bill Dumbaugh, Kevin Flanagan, John O'Conner, Mark Pabst, Gordon Shepardson, Bob Vincent, and John Wahler. (9 of 11)

Absent Members:
Tom Allen, and Corky Williams.

Electrical TAC: Kevin Flanagan (chair), Neal Burdick, Ken Castronovo, Leonard Devine, Jr. (*Alternate: Nelson Montgomery*), Shane Gerwig, David Rice (*Alternate: Steve Mitchell*), Joe Territo, Clarence Tibbs, and Dwight Wilkes. (9 of 11)

Absent Members:
Oriol Haage, and Roy Van Wyk.

DBPR Staff Present

Norman Bellamy, Chris Burgwald, Jim Hammers, April Hammonds, Mo Madani, and Jim Richmond.

Commissioners Present

Fred Schilling, Jim Schock, and Jeff Stone.

Meeting Facilitation and Reporting

The TAC Chairs meeting was facilitated by Jeff Blair from the FCRC Consensus center at Florida State University. Information at: http://consensus.fsu.edu/

CONSENSUS CENTER

Background and Supporting Documents

The agenda and relevant background and supporting documents are linked to each agenda item. The Agenda URLs for the October 14, 2015 TAC meetings are as follows:

http://www.floridabuilding.org/fbc/commission/FBC_1015/Swimming_Pool_TAC/Swimming_Pool_TAC_Agenda_101415.htm

http://www.floridabuilding.org/fbc/commission/FBC_1015/Electrical_TAC/Electrical_Agenda_TAC_101415.htm

AGENDA REVIEW

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the agenda for the October 24, 2015 meeting as posted/presented.

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the agenda for the October 14, 2015 meeting as posted/presented.

Following are the key agenda items approved for consideration:

- To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
- To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
- To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
- To Adopt Consensus Recommendations for Submittal to the Commission
- To Consider Public Comment
- To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

The complete Agenda is included as *"Attachment 1"* of this report.

(See Attachment 1—Agenda)

APPROVAL OF SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

APPROVAL SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS
Requirement for Low Voltage Lighting in Residential Pools for New Construction

At the September 28, 2015 meeting the Swimming Pool TAC and the Electrical TAC voted to approve in concept a code amendment proposal requiring low voltage lighting in residential pools for new construction, with the understanding that relevant safety data and other documentation would be evaluated prior to a final vote on any recommendation submitted to the Florida Building Commission.

At the October 14, 2015 meeting the TACs were asked to offer options regarding possible requirement for low voltage lighting in residential pools for new construction. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. Jeff explained that members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations.

Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked a series of options regarding low voltage lighting in residential pools for new construction.

The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN

Identification of Issues and Options, and Acceptability Ranking of Options in Turn

Jeff explained that the TACs would address each of the four key issues in turn by topic, and that members would be invited to propose and comment on options before the TAC members ranked them. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. The Phase II topics are Bonding, Grounding, Retrofitting of Existing Swimming Pools, and Education of Contractors and Consumers. Jeff explained that TAC members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations. Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked the proposed options for acceptability. All of the options proposed are included in the ranking results. Following are the option(s) ranked that achieved a consensus level of support (≥ 75% in favor):

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers,

brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.
The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

TAC ACTIONS

Following the opportunity provided for questions and answers, public comment and discussion, the TACs took the following actions:

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendations.

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendation.

NEXT STEPS

Following are the next steps for the Swimming Pool Electrical Safety Project:

- The Commission will evaluate the TACs' (Swimming Pool TAC and Electrical TAC) consensus package of recommendations at the October 15, 2015 meeting.
- The Commission will take the lead with ensuring Code amendments are proposed consistent with any recommendations approved by the Commission regarding swimming pool electrical safety requirements.

ADJOURNMENT

After a determination that a quorum was still present the Swimming Pool TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

After a determination that a quorum was still present the Electrical TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

ATTACHMENT 1
OCTOBER 14, 2015 MEETING AGENDAS

FLORIDA BUILDING COMMISSION
SWIMMING POOL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE ELECTRICAL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES
➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report) ➢ To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction) ➢ To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education) ➢ To Adopt Consensus Recommendations for Submittal to the Commission ➢ To Consider Public Comment ✓ To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

MEETING AGENDA—WEDNESDAY, OCTOBER 14, 2015		
All Agenda Times—Including Adjournment—Are Approximate and Subject to Change		
10:00 AM	**A.)**	**WELCOME AND INTRODUCTIONS**
	B.)	**AGENDA REVIEW AND APPROVAL (October 14, 2015)**
	C.)	**REVIEW AND APPROVAL OF FACILITATOR'S SUMMARY REPORT (September 28, 2015)**
	D.)	**IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS** Requirement for Low Voltage Lighting in Residential Pools for New Construction • Identification, Discussion and Acceptability Ranking of Options In Turn
	E.)	**ADOPTION OF PHASE I CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
12:00 PM	*LUNCH*	
1:00 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN** Identification of Issues and Options, and Acceptability Ranking of Options in Turn • Bonding • Grounding • Retrofitting of Existing Swimming Pools • Education of Contractors and Consumers
3:00 PM	*BREAK*	
3:15 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN CONTINUED**
	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

FLORIDA BUILDING COMMISSION
ELECTRICAL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE SWIMMING POOL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES
➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
➢ To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
➢ To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
➢ To Adopt Consensus Recommendations for Submittal to the Commission
➢ To Consider Public Comment
✓ To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

MEETING AGENDA—WEDNESDAY, OCTOBER 14, 2015		
All Agenda Times—Including Adjournment—Are Approximate and Subject to Change		
10:00 AM	**A.)**	**WELCOME AND INTRODUCTIONS**
	B.)	**AGENDA REVIEW AND APPROVAL (October 14, 2015)**
	C.)	**REVIEW AND APPROVAL OF FACILITATOR'S SUMMARY REPORT (September 28, 2015)**
	D.)	**IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS** Requirement for Low Voltage Lighting in Residential Pools for New Construction • Identification, Discussion and Acceptability Ranking of Options In Turn
	E.)	**ADOPTION OF PHASE I CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
12:00 PM	*LUNCH*	
1:00 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN** Identification of Issues and Options, and Acceptability Ranking of Options in Turn • Bonding • Grounding • Retrofitting of Existing Swimming Pools • Education of Contractors and Consumers
3:00 PM	*BREAK*	
3:15 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN CONTINUED**
	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

ATTACHMENT 2
OPTIONS ACCEPTABILITY RANKING RESULTS

I. PHASE I RECOMMENDATIONS

LOW VOLTAGE LIGHTING IN RESIDENTIAL SWIMMING POOLS FOR NEW CONSTRUCTION

Low Voltage *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements).**				
Swimming Pool TAC (6-3) 67%	5	1	1	2
Electrical TAC (5-4) 56%	4	1	1	3
Option B: **Maintain NEC requirements for new residential pools**				
Swimming Pool TAC (7-2) 78%	6	1	1	1
Swimming Pool TAC (6-3) 67%	5	1	1	2
Revised Ranking *Electrical TAC* (5-4) 56%	4	1	3	1
Option C: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements) for energy conservation purposes.**				
Swimming Pool TAC (7-2) 78%	5	2	1	1
Swimming Pool TAC (4-5) 44%	2	2	2	3
Revised Ranking *Electrical TAC* (6-3) 67%	2	4	0	3
Revised Ranking *Electrical TAC* (5-4) 56%	3	2	1	3
Option D: **Require LED pool lights with plastic niches or without niches in new construction.**				
Swimming Pool TAC (3-6) 33%	2	1	3	3
Electrical TAC (2-7) 22%	1	1	4	3

Option E: **All residential pools shall meet the requirements of code and shall be require a monitoring device to detect stray currents in the water.**				
Swimming Pool TAC (2-7) 22%	**0**	**2**	**5**	**2**
Electrical TAC (3-6) 33%	**1**	**2**	**6**	**0**

II. PHASE II RECOMMENDATIONS

1. BONDING

No specific options were evaluated for bonding.

2. GROUNDING

Grounding *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).**				
Swimming Pool TAC **(9-0) 100%**	**4**	**5**	**0**	**0**
Electrical TAC **(9-0) 100%**	**5**	**4**	**0**	**0**

3. RETROFITTING OF EXISTING POOLS

Retrofitting *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.**				
Swimming Pool TAC (5-3) 63%	**2**	**3**	**3**	**0**
Electrical TAC **(6-2) 75%**	**4**	**2**	**2**	**0**

4. EDUCATION INITIATIVES FOR CONTRACTORS AND CONSUMERS

Education *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Initiate a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.**				
Swimming Pool TAC **(9-0) 100%**	**9**	**0**	**0**	**0**
Electrical TAC **(9-0) 100%**	**8**	**0**	**0**	**0**

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015

RECOMMENDATIONS TO THE FLORIDA BUILDING COMMISSION

MONDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

TAC ACTIONS

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 2 consensus recommendations from the TAC (grounding and education).

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 3 consensus recommendations from the TAC (grounding, education, and existing swimming pools).

SW7014

Date Submitted	12/31/2015	**Section**	454...6.5.16.6	**Proponent**	Centera John
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

Eliminates unnecessary and excessive UV requirements for lower risk facilities and specifies use for higher risk facilities

Rationale

UV equipment used in lower risk facilities such as swimming pools, quiet pools, and spas can utilize an NSF® 50 tested and certified UV system as a supplement to a properly permitted chlorination system, for purposes of reducing chlorine consumption, lowering chloramine levels, or providing additional disinfection. Under these applications no claim to crypto removal can be made.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact

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

Reduces costs for approval variances and equipment for lower risk facilities

Impact to industry relative to the cost of compliance with code

reduces cots for approval variances and equipment for lower risk facilities

Requirements

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

No impact on health, welfare, and safety of the general public

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

Improves code by making code compliance reasonable for lower risk facility owners by specifying UV compliance criteria for higher risk facilities

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

Does not discriminate

Does not degrade the effectiveness of the code

Does not degrade the code effectiveness

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW7014-G1

Proponent	bob vincent	**Submitted**	2/25/2016	**Attachments**	No

Comment:

I agree that the new NSF 50-2014 standard for UV disinfection devices is a good certification standard for the supplemental UV devices. Pools listed here with high risk of infectious disease should include spa pools in addition to those mentioned, since numerous disease outbreaks, including fatalities have occurred in FL spa pools. The UV devices certified under NSF 50 have two categories, with one tested for Crypo. sufficiently close to the US EPA criteria that it should be allowed in code.

454.1.6.5.16.6 Ultraviolet (UV) light disinfectant equipment may be used as supplemental water treatment on public pools [and additional treatment on interactive water features (IWFs)] subject to the conditions of this paragraph and manufacturer's specifications. UV is encouraged to be used to eliminate or reduce chlorine-resistant pathogens, especially the protozoan cryptosporidium.

1..UV equipment and electrical components and wiring shall comply with the requirements of the *National Electrical Code* and the manufacturer shall provide a certification of conformance to the jurisdictional building department.

2..UV equipment shall meet UL standards and shall be electrically interlocked with recirculation pump(s) on all pools and with feature pumps(s) on an IWF such that when the UV equipment fails to produce the required dosage as measured by an automated sensor, the feature pump(s) are disabled so the water features do not operate.

3. UV equipment **used in higher risk facilities such interactive water features, wading pools, and activity pools**shall be validated by a capable party that it delivers the required and predicted UV dose at the validated flow, lamp power and water UV transmittance conditions, and has complied with all professional practices summarized in the *USEPA Ultraviolet Disinfectant Guidance Manual dated November 2006*, which is publication number EPA 815-R-06-007 available from the department athttp:// www.floridashealth.org/Environment/ water/swim/index.html or at http:// www.epa.gov/safewater/disinfection/lt2/ pdfs/guideit2_uvguidance.pdf.

4. UV equipment shall constantly produce a validated dosage of at least 40 mJ/cm^2 (millijoules per square centimeter) at the end of lamp life.

5. The UV equipment shall not be located in a side stream flow and shall be located to treat all water returning to the pool or water features.

Date Submitted	1/1/2016	**Section**	454.1.10.1	**Proponent**	Jennifer Hatfield
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

Reinstates language from the 2010 Code that was not included in the 5th edition. This is needed to ensure certain safety aspects are addressed when resurfacing a public swimming pool.

Rationale

This language was removed from the 5th edition of the Code because it was thought to be duplicative to what already existed in the DOH 64E-9 public pool rule. However, that rule is being finalized without the resurfacing language due to the interpretation of 2012 legislation that removed the DOH's authority over construction of public pools. This modification reinstates that language back into the Code to ensure some authority governs the safety requirements that need to be addressed when resurfacing a public swimming pool.

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, ensures safety features are addressed when resurfacing a public swimming pool.

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

Yes by reinstating language that was removed.

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

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness.

Is the proposed code modification part of a prior code version?

YES

The provisions contained in the proposed amendment are addressed in the applicable international code?

NO

The amendment demonstrates by evidence or data that the geographical jurisdiction of Florida exihibits a need to strengthen the foundation code beyond the needs or regional variation addressed by the foundation code and why the proposed amendment applies to the state?

NO

The proposed amendment was submitted or attempted to be included in the foundation codes to avoid resubmission to the Florida Building Code amendment process?

NO

Alternate Language

1st Comment Period History 01/13/2016 - 02/25/2016

7070-A1

Proponent Jennifer Hatfield **Submitted** 2/25/2016 **Attachments** Yes

Rationale

Making slight edits to seperate riser height for pools and spas, remove the word recessed, and add another section reference addressing ladders.

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 provides for safety requirements to be met when resurfacing a public pool.

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

No

Does not degrade the effectiveness of the code

No it improves it by reinstating language that was unintentionally left out of the 5th edition.

Is the proposed code modification part of a prior code version?

YES

The provisions contained in the proposed amendment are addressed in the applicable international code?

NO

The amendment demonstrates by evidence or data that the geographical jurisdiction of Florida exihibits a need to strengthen the foundation code beyond the needs or regional variation addressed by the foundation code and why the proposed amendment applies to the state?

NO

The proposed amendment was submitted or attempted to be included in the foundation codes to avoid resubmission to the Florida Building Code amendment process?

NO

454.1.10.1 Modifications. Modifications include nonequivalent changes or additions to the recirculation system, treatment equipment, physical structure or appurtenances. Replacement of the pool or spa shell is considered to be construction of a new facility and shall be processed as such. The installation of new decking is not considered a modification if it is installed in conformance with Section 454.1.3.1, and deck markings are upgraded in accordance with Section 454.1.2.3. Resurfacing the pool interior to original nontoxic, slip-resistant and smooth specifications or equivalent replacement of equipment are not considered modifications. However, the following items shall be addressed during resurfacing projects:

454.1.10.1.1 The lip of the gutter must be leveled to within 1/4 inch (6.4 mm) between the highest and lowest point and the downward slope from the lip to the drain must be maintained as originally designed or increased, but shall not exceed new construction standards.

454.1.10.1.2 Tile step markings must be installed meeting the requirements of Section 454.1.2.5.3.

454.1.10.1.3 Where applicable the slope break marking must be installed meeting the requirements of Section 454.1.2.2.3.2 and safety line must be installed 2 feet (610 mm) before the marking.

454.1.10.1.4 Depth markers and NO DIVING markers must be installed in accordance with Section 454.1.2.3.

454.1.10.1.5 The pool ladder must have a 3 to 6 inch (76 to 152 mm) clearance from the pool wall. New cross-braced ladder(s) shall be installed in place of non cross-braced ladder(s) in conformance with Section 454.1.2.5.1 during a pool resurfacing.

454.1.10.1.6 Should resurfacing works affect the step riser heights, no riser shall exceed 12 inches (305 mm) and the intermediate risers shall be made uniform.

454.1.10.1.7 Recessed treads that protrude from the pool wall shall be removed and replaced with a cross-braced ladder or reconstructed to meet the requirements of Section 454.1.2.5.2.

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454.1.10.1.5 The pool ladder must have a 3 to 6 inch (76 to 152 mm) clearance from the pool wall. New cross-braced ladder(s) shall be installed in place of non cross-braced ladder(s) in conformance with Section 454.1.2.5.1 during a pool resurfacing.

454.1.10.1.6 Should resurfacing works affect the step riser heights, no riser shall exceed 10 inches (254 mm) for pools and 12 inches (305 mm) for spas, and the intermediate risers shall be made uniform.

454.1.10.1.7 Step treads that protrude from the pool wall shall be removed and replaced with a cross-braced ladder or reconstructed to meet the requirements of Sections 454.1.2.5.1 or 454.1.2.5.2.

Date Submitted	1/1/2016	**Section**	454.1.1	**Proponent**	Jennifer Hatfield
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

Amends definitions and adds a new definition.

Rationale

An interactive water feature is a public swimming pool regulated by the department of health for water quality and safety features; this proposal simply clarifies that it is a type of public swimming pool. The proposal also removes decking from the definition of modification and defines a vanishing edge pool, which is currently not defined in the code.

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, it makes clarifications necessary for the welfare of the public.

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

Yes by clarifying that a IWF is a public pool and adding a definition that currently does not exist.

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

It does not discriminate.

Does not degrade the effectiveness of the code

It does not degrade the effectiveness of the code.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

Proponent bob vincent **Submitted** 2/25/2016 **Attachments** No

SW7058-G1

Comment:

I disagree that decking should be struck; in most cases, this is a modification. This is applicable to the wet deck only, and has consequences on slip resistance, injury potential, and water quality if the wet deck is not properly sloped to drain. The proposed vanishing edge pool currently has code term for the gutter system: deck level perimeter overflow system.

Renumber Definitions as 454.1.2 (currently sits under 454.1.1 Flood Hazard areas) and amend as follows:

"Interactive water features" means a structure designed to allow for recreational activities with recirculated, filtered, and treated water; but having minimal standing water. Water from the interactive fountain type features is collected by gravity below grade in a collector tank or sump. The water is filtered, disinfected and then pumped to the feature spray discharge heads. The collector tank and water filtration features required make this structure a type of public swimming pool.

"Modification" means any act which changes or alters the original characteristics of the pool as approved. For example, changes in the recirculation systems, ~~decking,~~ treatment systems, disinfection system and pool shape are modifications.

A **"public swimming pool"** or "public pool" means a watertight structure of concrete, masonry, or other approved materials which is located either indoors or outdoors, used for bathing or swimming by humans, and filled with a filtered and disinfected water supply, together with buildings, appurtenances, and equipment used in connection therewith. A public swimming pool or public pool shall mean a conventional pool, spa-type pool, wading pool, special purpose pool, interactive water feature or water recreation attraction, to which admission may be gained with or without payment of a fee and includes, but is not limited to, pools operated by or serving camps, churches, cities, counties, day care centers, group home facilities for eight or more clients, health spas, institutions, parks, state agencies, schools, subdivisions, or the cooperative living-type projects of five or more living units, such as apartments, boardinghouses, hotels, mobile home parks, motels, recreational vehicle parks, and townhouses. The term does not include a swimming pool located on the grounds of a private residence.

"Vanishing Edge Pool" means a water-feature detail in which water flows over the edge of at least one of the pool walls and is collected in a catch basin. Also called "negative edge pool" and "infinity pool."

SW6509

Date Submitted	12/1/2015	**Section**	454.1.2.3.1	**Proponent**	Centera John
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Public Swimming Pools and Bathing Places section 454

Summary of Modification

454.1.2.3.1 Depths and Markings - Define location of depth marker tiles for pool with recessed gutters as on the back wall of the recessed gutter

Rationale

Building department field inspectors and county health department inspectors have varying interpretations and requirements as to the location of depth marker tiles for pools with a recessed gutter. Some require the tile makers to be on the back wall of the recessed gutter, others, particularly if the pool has a precast coping, require the tile be installed on the underside of the coping. Defining the location of the depth marker tiles as suggested will provide clarity re the code interpretation for pools with recefssed gutters as well as installation uniformity.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No cost impact

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

No cost impact

Impact to industry relative to the cost of compliance with code

No cost impact

Requirements

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

Yes. Unformity of depth marker locations will improve bather safety by making information more clearly visible for pools with recessed gutter systems.

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

Equivalent. It is just a clarification of an existing code.

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

Correct. Does not discriminate...

Does not degrade the effectiveness of the code

Correct. Does not degrade...

Is the proposed code modification part of a prior code version? No

454.1.2.3.1 (4)

When a curb is provided, the depth markings shall be installed on the inside and outside or top of the pool curb. When a pool curb is not provided, the depth markings shall be located on the inside vertical wall at or above the water level and on the edge of the deck within 2 feet (610 mm) of the pool water. When open type **or recessed** gutter designs are utilized, depth markers shall be located **within the tile line** on the back of the gutter wall.

SW7016

Date Submitted	12/31/2015	**Section**	454.1.3.1.6	**Proponent**	Centera John
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

454.1.3.1.6 Decks and Walkways - Remove language in the code that says 'feet', and leave pool perimeter obstruction allowance at the maximum 10%.

Rationale

The “or 10 feet” should be eliminated or increased to a reasonable distance (20’). 10’ is far too little of a distance. A 20’x40’ skimmer pool would merit a 12’ obstruction (10% of 120’ perimeter), and we are designing pools 4 to 6 times bigger than that.
10% is a fair amount to block at one time. Restricting it to 10’ for a 400’ perimeter pool, is only allowing 2.5% of the perimeter to be blocked at a time.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
No impact

Impact to building and property owners relative to cost of compliance with code
No impact

Impact to industry relative to the cost of compliance with code
No impact

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
The proposed modification has no impact on the heath, safety, or welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction
Allows greater design flexibility for larger pools without any detriment to bather patron safety. Would make pool areas more enjoyable for bather use.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities
Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities (553.73(9)(a)4,F.S.)

Does not degrade the effectiveness of the code
Does not degrade the effectiveness of the code.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

Proponent bob vincent **Submitted** 2/25/2016 **Attachments** No

SW7016-G1

Comment:

This is same as SW6513, and very similar to SW7068. Eliminating the ten foot criteria is excessive, since that leaves the obstructed area at 10% only. The SW6513 writer states pools of perimeter of 720' are designed now, which is a 72' approvable obstruction. This is hardly guardable at a lifeguarded pool, and impossible for a lay person to rescue at an unguarded pool. Life hooks are only 16' long for reaching the pool bottom from the nearest deck point. Some reasonable maximum distance (perhaps 16') needs to remain in the code with the percentage, or life-safety mitigations need to be written into the code.

454.1.3.1.6 Twenty percent of the deck along the pool perimeter may be obstructed as long as any one obstruction does not exceed ten percent **of the pool perimeter** ~~or ten feet (3048 mm), whichever is less,~~ in any one area. Obstructions shall have a wet deck area behind or through them, with the near edge of the walk within 15 feet (4572 mm) of the water except approved slide obstructions shall have the near edge of the walk within 35 feet (10 668 mm) of the water. These obstructions must be protected by a barrier or must be designed to discourage patron access. Obstructions shall not include pool exit points. When an obstruction exists in multiple areas around the pool, the minimum distance between obstructions shall be 4 feet (1219 mm).

Date Submitted	11/6/2015	**Section**	454.1.4.2.3	**Proponent**	Bryan Holland
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

N/A

Summary of Modification

This modification restores the electrical requirements for underwater luminaires to the national standard by removing redundant and unnecessary language.

Rationale

The requirements of the National Electrical Code, as written, provide practical safeguarding of persons and property from hazards arising from the use of electricity. There is no evidence the current requirement in Section 454.1.4.2.3 of the FBC-B that limits underwater lighting to 15V & 300W constitutes a safer and less hazardous installation. As currently written, other equally safe and effective means of providing underwater illumination at swimming pools are prohibited with no substantiation. This modification will restore the electrical requirements for underwater luminaires to the national standard.

This includes 680.23(A)(1), (3), and (8) of the 2014 NEC. These sections ensure that only listed and GFCI protected products are used for the installation of pool lighting systems above the 15V threshold. It is virtually impossible to be shocked or electrocuted by any underwater lighting product when properly installed and maintained.

This modification harmonizes the requirements for underwater luminaires for public and private commercial swimming pools with private residential swimming pools. Current product standards and installation requirements make the stricken language in the modification unnecessary.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This modification will reduce the burden on the local AHJ to enforce the unnecessary state modification to the national standard. This will help reduce conflicts between installers and the AHJ during permitting, plan review, and inspection.

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

This modification could potentially reduce the cost of compliance to building and property owners by providing them more options when selecting the type and rating of the underwater luminaires to be installed.

Impact to industry relative to the cost of compliance with code

This modification would not increase or decrease the cost of compliance to the industry.

Requirements

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

This modification removes an unnecessary prohibition in the code while maintaining the minimum requirements to ensure health, safety, and welfare of the general public.

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

This modification restores the code to the national standard which provides equivalent products and methods for illuminating swimming pools.

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

This modification removes the requirements that discriminate against safe and effective products, methods and systems which have demonstrated equivalent safety.

Does not degrade the effectiveness of the code

This modification does not degrade the effectiveness of the code.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

Proponent Thomas Lasprogato **Submitted** 2/3/2016 **Attachments** No

SW6452-G1

Comment:

I SUPPORT

1st Comment Period History 01/13/2016 - 02/25/2016

SW6452-G2

Proponent	Vincent Della Croce	Submitted	2/7/2016	Attachments	No

Comment:

Support

1st Comment Period History 01/13/2016 - 02/25/2016

SW6452-G3

Proponent	Jennifer Hatfield	Submitted	2/25/2016	Attachments	No

Comment:

On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted:

1. Luminaires need to comply with the adopted edition of the NEC.

2. In this aspect this proposal can accomplish what it appears to intend (as to the details) by simply requiring the luminaires and installation comply with the NEC edition adopted at the time of the alteration. The detailed text requirements are unnecessary and redundant.

454.1.4.2.3 Underwater lighting. Underwater luminaires shall comply with Chapter 27 of the Florida Building Code, Building. ~~Underwater lighting shall utilize transformers and low-voltage circuits with each underwater light being grounded. The maximum voltage for each light shall be 15 volts and the maximum incandescent lamp size shall be 300 watts.~~ The location of the underwater ~~lights~~ luminaires shall be such that the underwater illumination is as uniform as possible. ~~and shall not be less than 18 inches (457 mm) below the normal operating water level determined by the center-line of the skimmer or top lip of the gutter. All underwater lights which depend upon submersion for safe operation shall have protection from overheating when not submerged.~~ Underwater lighting requirements can be waived when the overhead lighting provides at least 15 footcandles (150 lux) of illumination at the pool water surface and pool wet deck surface. ~~Alternative lighting systems which use 15 volts or less, or use no electricity in the pool or on the pool deck, such as LED (light emitting diode) fiber-optic systems, may be utilized if the manufactures specifications provide for the equivalency in watt output.~~

Date Submitted	1/1/2016	**Section**	454.1.9.6.3	**Proponent**	Jennifer Hatfield
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

Inserts the word "feet"

Rationale

Addresses a typo in the 2010 Code that said 7 inches, the Supplement online only said “7” therefore, this code change simply adds in “feet” to make the clarification.

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

It does not.

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

Yes by making clarification.

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

It does not discriminate.

Does not degrade the effectiveness of the code

It does not degrade the effectiveness of the code.

Is the proposed code modification part of a prior code version? No

454.1.9.6.3 The pool deck may slope toward the pool for no more than 7 feet (2133 mm), as measured from the overflow system grate outward. Beyond this area the deck shall slope away from the pool in accordance with Section 454.1.2.2.3.

Date Submitted	1/1/2016	**Section**	454.1.9.6.3	**Proponent**	Jennifer Hatfield
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

Better defines color value of allowable pool surface colors.

Rationale

The existing code language is somewhat arbitrary and subjective. Pool surface manufacturers today have a plethora of surface colors available and a quantified color value is needed to provide installers direction for proper installation.

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. Lighter pool surface colors make a pool or spa safer so as not hinder visibility of a bather in distress.

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

Yes. This quantifies an acceptable color value for pool and spa surfaces, lessening the possibility of an installer applying an improper surface color.

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

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW7073-G1

Proponent bob vincent **Submitted** 2/25/2016 **Attachments** No

Comment:

Munsell color of the base marcite probably will not work as we have recently discovered from discussions initiated by the FSPA with one manufacturer of these products. They have provided info on a better standard that should be explored to make this an objective measurable science-based standard, more like tile slip resistance is. The proposal should be changed to light reflectance as another large state uses. More info in being gathered now, and should be ready for the TAC to review.

1st Comment Period History 01/13/2016 - 02/25/2016

SW7073-G2

Proponent Jennifer Hatfield **Submitted** 2/25/2016 **Attachments** No

Comment:

The FL Swimming Pool Association, along with the United Pool & Spa Association, has been investigating this proposal further after information was provided that although well intentioned, the current proposal is flawed as many different Munsell color charts exist. The Associations have been working with manufacturers to determine alternative language that will accomplish the original intent of the proposal. Final alternative language will be presented at the April 4 meeting, but DRAFT language that had yet to be solidified by all parties by the written comment deadline is as follows:

"The interior finish coating floors and walls shall be comprised of a non-pigmented white cementitious binder component together with a sand/aggregate component. The finish coating shall have a dry Lightness level (CIE L value) of 80.0 or greater and a wet Luminous Reflectance Value (CIE Y value) of 50.0 or greater, as determined by test results provided by the manufacturer, utilizing testing methodology from American Standard ASTM D 4086, ASTM E 1477, ASTM E 1347and British Standard BS 8493:2008+A1:2010.”

454.1.2.4 Color. Pool floors and walls shall be white or light pastel in color with a neutral Munsell Color Value of 8.0 or higher and shall have the characteristic of reflecting rather than absorbing light.

Exception: A dark color may be used if (1) a tile line [minimum 4 inches (102 mm), maximum 12 inches (305 mm)] is installed at the water line or (2) if 2-inch (51 mm) tile is installed along the pool wall edge of the gutter lip for gutter type pools.

Date Submitted	1/1/2016	**Section**	454.1.9.8.6.3	**Proponent**	Jennifer Hatfield
Chapter	4	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

Allows for UV systems to be installed on the filter return lines as an alternate to the feature return line placement.

Rationale

Allows for UV systems to be installed on the filter return lines as an alternate to the feature return line placement.

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

Could decrease the cost of the recirculation system.

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 as it affects the recirculation system of an interactive water feature using a UV system.

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

Yes, it reduces the need for maintenance and makes a more efficient system.

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

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

Proponent Jennifer Hatfield **Submitted** 2/25/2016 **Attachments** Yes

SW7074-G1

Comment:

Additional information has been provided for consideration by FSPA and UPSA member Al Mendoza on this proposal. Specifically, in regards to the changes proposed to section 454.1.9.8.6.3, Mr. Mendoza does not agree with the amendment as proposed. The main reason he believes we should not treat only the tank water in a filtration loop is that science has shown that you cannot be assured that all of the water in the tank during operational hours and even during non operational hours is being filtered on a timely manner, no less before it goes to the feature pump and out to the patrons. We are often pulling water back out of the tank that has not gone through filtration. We also know that are dead spots of unfiltered/treated water through the CFD modeling testing that was completed by various manufacturers. It is his opinion that allowing this would be a great disservice to the patrons and safety in our industry. The initial proposal and this additional information will be discussed within the industry associations, with the goal to bring additional information with an industry position to the April 4 meeting. Additional information provided by Mr. Mendoza is also attached.

454.1.9.8.6.3 Alternatively, the contained volume of the system may be filtered and chemically treated based upon a 30-minute turnover of the contained volume with 100 percent returned to the collector tank by manifold piping. If this alternative is chosen, all water returned to the collector tank through the filter system ~~spray feature(s)~~ must also be treated with an Ultraviolet (UV) light disinfection unit ~~equipment~~ to accomplish protozoan destruction in accordance with sound engineering and the requirements of Section 454.1.6.5.16.6. ~~This alternative must have the ability to feed 6 mg/L free chlorine to the feature water as it is returned to the spray feature.~~ The UV disinfection equipment shall be electrically interconnected such that whenever it fails to produce the required UV dosage, the interactive water ~~spray~~ features ~~pump(s)~~ and flow will be immediately stopped.

454.1.6.5.16.6 Ultraviolet (UV) light disinfectant equipment may be used as supplemental water treatment on public pools (and additional treatment on IWF's) subject to the conditions of this paragraph and manufacturer's specifications. UV is encouraged to be used to eliminate or reduce chlorine-resistant pathogens, especially the protozoan Cryptosporidium.

1. UV equipment and electrical components and wiring shall comply with the requirements of the *National Electrical Code* and the manufacturer shall provide a certification of conformance to the jurisdictional building department.

2. UV equipment shall meet UL standards and shall be electrically interlocked with recirculation pump(s) on all pools and with feature pumps(s) on an IWF such that when the UV equipment fails to produce the required dosage as measured by an automated sensor, the feature pump(s) are disabled so the water features do not operate.

3. UV equipment shall be validated by a capable party that it delivers the required and predicted UV dose at the validated flow, lamp power and water UV transmittance conditions, and has complied with all professional practices summarized in the *USEPA Ultraviolet Disinfectant Guidance Manual dated November 2006*, which is publication number EPA 815-R-06-007 available from the department at http://www.floridashealth.org/Environment/water/swim/index.html or at http://www.epa.gov/safewater/disinfection/lt2/pdfs/guide_lt2_uvguidance.pdf.

4. UV equipment shall constantly produce a validated dosage of at least 40 mJ/cm2 (milliJoules per square centimeter) at the end of lamp life.

5. The UV equipment shall not be located in a side stream flow and shall be located to treat all water returning to the pool or water features collector tank.

Additional information from: Alvaro G. Mendoza, Commercial Energy Specialists

UV destroying chlorine: Proper design and installation eliminates this issue. Most validated UV units allow programmable ramp down of UV intensity during off peak time, so excessive Chlorine consumption has not been an issue. Also when an activator is used, the UV system should be installed in a bleed loop back tot he tank (standby mode) and then activated to proper disinfection level when the feature pump turns back on. This is very commonplace, easy to add, and quite inexpensive. Flow switches should not be used when sensors/activators are used because of the delayed restart with a typical validated UV lamp. The bleed loop design has been in use successfully for more than 10 years.

Per UV wiper systems: UV wiper systems require maintenance, and are part of the annual preventative maintenance (PM) requirements required by UV manufacturers. They have historically not been problematic unless the PM process has been neglected for more than a year.

Per the Crypto on the pad and wash-down:

1. Crypto is shed in the feces of infected humans and animals. People become infected by ingesting the organism. Crypto can be spread person-to-person or animal-person contact and by drinking contaminated water. Infected individuals can shed the organism in their stool for several weeks after they recover from the illness. Because cryptosporidiosis is transmitted by the fecal-oral route, the greatest potential to transmit the organism comes from infected people who have diarrhea, people with poor personal hygiene, and diapered children.
2. Therefore, contact on the pad unless they ingest it is not likely. The primary reason for using UV on splash pads is because the interactive water features create sprays of water that children ingest.
3. If full flow UV is used, even Crypto present in the tank will be inactivated in a single pass as long as the flow rate is within the EPA validation guidelines. A side-stream system could not make that claim.

Per cost of side stream versus full flow and safety:

1. It is clear that full flow validated UV provides 99.9% single pass inactivation of crypto up to the validated flow rate. A side stream system will not.
2. There are only a finite amount of validated units on the market, each with a

well defined flow rate.

3. While a side stream system might be slightly less money, few to none currently exist in the 50-75 GPM range so a contractor would be using virtually the same size unit on a side stream or full stream on smaller pads <200 GPM.
4. If units were to be developed for a lower flow rate, they would still be required to fulfill other requirements, like real time intensity monitoring, etc. and capital cost savings are yet to be established.
5. If a contractor wants a cheap alternative to UV protection against Crypto, they can always provide full flow filtration as allowed by the code.

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December 11, 2015

Interactive Water Feature UV treatment

A perspective of potential change regarding this subject as it pertains to the Florida Building Code section 454.

The current code requirements for the inclusion of Ultra-Violet light purification as mandated by the Florida Health Department on Interactive Water Feature systems needs to be revisited. The code requires, simply stated, that a splash pad must either utilize a certified UV system that shall be placed on the feature pump discharge line(s) before water is returned to the feature nozzles or the recirculation system may utilize 100% filtration on the feature water immediately before returning to the features.

Since this language was initially introduced in the original 64E.9 DOH code years ago we, as an industry, have had time to consider the benefits and problems it allowed. Here are a few points that I believe need to be considered for modification:

1) Ultra-violet light has the potential to destroy Chlorine. Even though subsequent Chlorine is injected into the return line after the UV chamber, water treated with chlorine is pumped through the UV light when the feature pump is on. If the UV is oversized for the application there is an even greater potential for destruction of Chlorine in the water. There is currently no language in the code that remedies this issue.
2) Since the code requires that if UV is used on an IWF it must be installed on and sized for the flow requirement of the feature discharge line. Feature pumps do not generally operate constantly during the day. They operate based on a touch sensor or activator that turns the pump on for several minutes and then off until reactivated. This eliminates the flow of water through the UV light chamber which may cause maintenance issues. Some medium intensity units use flow switches that turn the UV unit off

and require a cool down period before restarting. UV units that incorporate lens wipers are particularly prone to maintenance problems.

3) Cryptosporidium Protozoa is the primary reason that UV is used in these applications. Crypto has the potential to enter the Splash Pad through human or animal fecal matter on the pad. While this Protozoa is on the pad patrons are still susceptible to contact. UV has no effect on the protozoa unless it passes through the light chamber in the recirculation system. Water that passes through the UV chamber and then comes in contact with Crypto on the pad has no effect on it. While the feature pump is off Crypto is able to reproduce. Rain will wash the protozoa down the drain and into the collection tank which is filtered, but not passed through the UV unit during the systems off hours since the UV is only on the feature pump line.

4) Since the options are either UV on the feature discharge line or 100% filtration, most contractors will opt for the latter due to the extreme costs of UV units. Even though UV is a superior option for sterilizing Crypto than filter removal, extreme costs tend to limit the budgets of many applications around the State.

In summary I would like to propose an alternate option to be implemented into the Florida code for Interactive Water Features which allows for UV systems to be installed on the filter return lines as an alternate to the feature return line placement. Here are the benefits:

1) Double loop recirculation systems incorporate a smaller pump that is sized to turn the contents of retained water in the collector tank in 30 minutes or less. This alone would allow for a much smaller, yet just as effective alternative UV unit to help reduce the cost of the recirculation system.
2) The filter pump is required to operate 24 hours a day at a constant flow rate. This factor reduces the potential for UV units to consume halogens (chlorine) from the water when feature flow rates are reduced due to VFD or sequencing valve produced flow reductions.
3) Since the filter recirculation system is in operation after park hours the UV unit will continue to sterilize Crypto that has been collected in the tank as well as any additional that is washed into the tank during rainy conditions. The total volume of water in the tank will be processed through the UV light chamber a minimum of once every 30 minutes or more. This provides more potential for sterilization of Crypto prior to park opening each morning. (approximately 24 additional turnovers based on 9:00PM closing and 9:00AM opening)
4) All water will be filtered immediately prior to passing through the UV light cell. This reduces the need for maintenance and removes larger debris that may restrict the effectiveness of the light.

I would propose the language under section 454.1.9.8.6.3 be amended to read as follows:

"Alternatively, the contained volume of the system may be filtered and chemically treated based upon a 30 minute turnover of the contained volume with 100% returned to the collector tank by manifold piping. If this alternative is chosen, all water returned to the collector tank through the filter system must also be treated with an Ultraviolet (UV) light disinfection unit to accomplish protozoan destruction in accordance with sound engineering and the requirements at paragraph 454.1.6.5.16.6. The UV disinfection unit shall be electrically interconnected such that whenever it

fails to produce the required UV dosage, the splash pad (IWF) feature pump(s) and flow will be immediately stopped."

In conjunction with the previous language under section 454.1.9.8.6.3, I would also propose the language under section 454.1.6.5.16.6 be amended to read as follows:

"The UV equipment shall not be located in a side stream flow and shall be located to treat all filtered water returning to the pool or water feature collector tank."

Thank you for this consideration.

Respectfully,

Carl Shoffstall
FLORIDA PLAYSTRUCTURES & WATER FEATURES INC
Commercial Pool and Spa Contractor CPC1457810
Certified General Contractor CGC1520229
Electrical Contractor EC13002753
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CPSI 20460-0715
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Date Submitted	12/31/2015	**Section**	454.1.9.8.6.8	**Proponent**	Centera John
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

Eliminate requirement for duplicative water disinfection system for interactive water features (IWF's).

Rationale

The currently required duplicative chemical water treatment disinfection systems are unnecessary, as the two systems are 'fighting' each other, creating incorrect readings on the ORP/pH controllers, resulting in improper water chemistry that could lead to potential bather safety issues.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact.

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

reduces cost to IWF owners for unnecessary, duplicative water chemitry disinfection system

Impact to industry relative to the cost of compliance with code

Pool contractors' costs will be reduced by removing this secondary disinfection requirement on IWF's.

Requirements

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

Improves bather safety by eliminating potential cause of improperly disinfected water for IWF's (Interactive Water Features).

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

Improves code by removing unnecessary requirement for secondary disinfection system that ahs potential to mcreate improper water disinfection.

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

No, does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade effectiveness of code.

Is the proposed code modification part of a prior code version? No

Alternate Language

1st Comment Period History 01/13/2016 - 02/25/2016

6987-A1

Proponent Jennifer Hatfield **Submitted** 2/25/2016 **Attachments** Yes

Rationale

The original proposal will adversely affect SW7074 in that it will triple the size requirement for the UV unit. There is no revealed criteria that justifies this modification. It also reduces the amount of chemical contact time before the water passes through the UV chamber. The alternative language proposed allows for more chemical contact time by increasing the size of the collector tank. Chloramines are removed when passing through a UV chamber if the UV is properly sized for the flow rate. If the UV system is oversized for the flow rate then free chlorine is removed as it passes through the chamber. This justifies the need for more chemical contact time in the tank before the water passes through the UV chamber. Increasing the filter rate may limit the potential kill power of chlorine while upsizing the tank will give the chlorine more kill time.

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

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

No

Does not degrade the effectiveness of the code

No

Is the proposed code modification part of a prior code version? No

454.1.9.8.6.8 Where the filter system described in Section 454.1.9.8.6.1 is utilized, a second filter system and disinfection system shall be provided to treat the water in the collector tank when the feature/filter pump is not in operation. Said system shall be capable of filtering the total volume of water in the collector tank in 30 minutes and the disinfection system shall be capable of providing 12 mg/L of disinfectant to this flow rate. If said system operates continuously and is capable of filtering the total volume of water in the collector tank in 10 minutes (or less) and the disinfection system is capable of providing 12 mg/L of disinfectant to this higher flow rate, then the chemical treatment system described in 454.1.9.8.6.1 is not required.

454.1.9.8.6.8 Where the filter system described in section 454.1.9.8.6.1 is utilized, a second filter system and disinfection system shall be provided to treat the water in the collector tank when the feature/filter pump is not in operation. Said system shall be capable of filtering the total volume of water in the collector tank in 30 minutes and the disinfection system shall be capable of providing 12 mg/l of disinfectant to this flow rate. If said system operates continuously and is capable of filtering the total volume of water in the collector tank in 30 minutes, the disinfection system is capable of providing 12 mg/l of disinfectant to this higher flow rate and the collector tank is sized to retain a minimum volume of 5 minutes of the flow of all feature pumps, then the chemical treatment system described in 454.1.9.8.6.1 is not required.

Date Submitted	11/22/2015	**Section**	454.10.4	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

6491, 6492, 6493, 6494

Summary of Modification

The proposed code change requires GFCI protection be provided for replacement of pool pump motors, if not already in place.

Rationale

The proposed code change provides for provisions necessary to prevent electrocution in swimming pools. Also, see upleaded files.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Further enforcement/inspections would be necessary by the enforcement agencies to implement this prevision.

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

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Impact to industry relative to the cost of compliance with code

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Requirements

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

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

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

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

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

The proposed code change does not discriminate against materials or products.

Does not degrade the effectiveness of the code

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW6496-G1

Proponent	Thomas Lasprogato	**Submitted**	2/3/2016	**Attachments**	No

Comment:

NEUTRAL

1st Comment Period History 01/13/2016 - 02/25/2016

SW6496-G2

Proponent	Bryan Holland	**Submitted**	2/22/2016	**Attachments**	No

Comment:

I generally support this proposed modification. Reminding users of the code that GFCI protection is required when swimming pool pump motors or underwater luminaires are repaired or replaced will enhance the electrical safety of existing swimming pools.

1st Comment Period History 01/13/2016 - 02/25/2016

SW6496-G3

Proponent Jennifer Hatfield **Submitted** 2/25/2016 **Attachments** No

Comment:

On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted:

1. No enforcement measures are identified.

2. A retrofit program was implemented in California for non-residential pools only. Enforcement was through the county health departments and was of debatable success due to non-uniform electrical training of the health inspectors. An electrical permit and inspection by knowledgeable, properly trained personnel are necessary for viable enforcement.

3. There is no assurance that a homeowner or other untrained personnel will not try to perform the retrofit to avoid costs, resulting in, at best, no improvement in safety and, at worst, introduction of significant safety hazards. In some cases, the retrofit will require modification of the electrical system.

4. If such a program is to be implemented a uniform, effective enforcement procedure must be established. Otherwise, this will quite possibly increase unlicensed activity due to the additional costs that homeowners will otherwise incur.

Section 454.1.10.4 Swimming Pool - Electrical

454.1.10.4.1 GFCI Protection. Ground-fault Circuit-interrupter shall be provided as follows:

1. Where alteration work includes replacement of pool pump motors, a ground-fault circuit-interrupter shall be provided, if one is not already in place.
2. Where alteration work includes replacement of 120-volt pool lights, a ground-fault circuit-interrupter shall be provided, if one is not already in place.

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015 MEETING SUMMARY REPORT

WEDNESDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding swimming pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs voted unanimously to recommend the Commission approve the consensus package of recommendations from the TACs. The TACs' specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring

existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.

PROJECT OVERVIEW

The 2015 Florida Legislature identified the need to evaluate the electrical aspects of swimming pool safety focusing on minimizing electrocution risks linked to swimming pools. In response, the Florida Building Commission approved a research project (technical enrichment) for a *Swimming Pool Electrocution Prevention Study*. In order to implement the project the Commission convened a process to develop recommendations for pool safety focused on the prevention of electrocution in swimming pools. The Commission determined that the project would be evaluated and recommendations developed by convening concurrent meetings of the Commission's Swimming Pool Technical Advisory Committee and Electrical Technical Advisory Committee (TAC). The objective of the project is to evaluate key topical issues, and as appropriate develop code amendment proposals designed to minimize electrocution risks linked to swimming pools.

In response to the Commission's direction the Swimming Pool TAC and Electrical TAC agreed that the initial Phase I scope of the project is to determine whether to recommend a proposed code amendment that would require low voltage lighting in residential swimming pools for new construction. Once the Swimming Pool TAC and the Electrical TAC conclude their evaluation of low voltage lighting they will evaluate additional project relevant topics in Phase II of the project: specifically bonding, grounding, retrofitting of existing pools, and education.

AGENDA ITEM OUTCOMES

OPENING AND MEETING ATTENDANCE

The meeting was opened at 10:00 AM once a quorum was established for the Swimming Pool and Electrical TACs respectively, and the following members participated:

Swimming Pool TAC: James Batts (chair), Jordan Clarkson, Bill Dumbaugh, Kevin Flanagan, John O'Conner, Mark Pabst, Gordon Shepardson, Bob Vincent, and John Wahler. (9 of 11)

Absent Members:
Tom Allen, and Corky Williams.

Electrical TAC: Kevin Flanagan (chair), Neal Burdick, Ken Castronovo, Leonard Devine, Jr. (*Alternate: Nelson Montgomery*), Shane Gerwig, David Rice (*Alternate: Steve Mitchell*), Joe Territo, Clarence Tibbs, and Dwight Wilkes. (9 of 11)

Absent Members:
Oriol Haage, and Roy Van Wyk.

DBPR Staff Present

Norman Bellamy, Chris Burgwald, Jim Hammers, April Hammonds, Mo Madani, and Jim Richmond.

Commissioners Present

Fred Schilling, Jim Schock, and Jeff Stone.

Meeting Facilitation and Reporting

The TAC Chairs meeting was facilitated by Jeff Blair from the FCRC Consensus center at Florida State University. Information at: http://consensus.fsu.edu/

Background and Supporting Documents

The agenda and relevant background and supporting documents are linked to each agenda item. The Agenda URLs for the October 14, 2015 TAC meetings are as follows:

http://www.floridabuilding.org/fbc/commission/FBC_1015/Swimming_Pool_TAC/Swimming_Pool_TAC_Agenda_101415.htm

http://www.floridabuilding.org/fbc/commission/FBC_1015/Electrical_TAC/Electrical_Agenda_TAC_101415.htm

AGENDA REVIEW

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the agenda for the October 24, 2015 meeting as posted/presented.

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the agenda for the October 14, 2015 meeting as posted/presented.

Following are the key agenda items approved for consideration:

- To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
- To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
- To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
- To Adopt Consensus Recommendations for Submittal to the Commission
- To Consider Public Comment
- To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

The complete Agenda is included as *"Attachment 1"* of this report.

(See Attachment 1—Agenda)

APPROVAL OF SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

APPROVAL SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS
Requirement for Low Voltage Lighting in Residential Pools for New Construction

At the September 28, 2015 meeting the Swimming Pool TAC and the Electrical TAC voted to approve in concept a code amendment proposal requiring low voltage lighting in residential pools for new construction, with the understanding that relevant safety data and other documentation would be evaluated prior to a final vote on any recommendation submitted to the Florida Building Commission.

At the October 14, 2015 meeting the TACs were asked to offer options regarding possible requirement for low voltage lighting in residential pools for new construction. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. Jeff explained that members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations.

Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked a series of options regarding low voltage lighting in residential pools for new construction.

The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN

Identification of Issues and Options, and Acceptability Ranking of Options in Turn

Jeff explained that the TACs would address each of the four key issues in turn by topic, and that members would be invited to propose and comment on options before the TAC members ranked them. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. The Phase II topics are Bonding, Grounding, Retrofitting of Existing Swimming Pools, and Education of Contractors and Consumers. Jeff explained that TAC members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations. Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked the proposed options for acceptability. All of the options proposed are included in the ranking results. Following are the option(s) ranked that achieved a consensus level of support (≥ 75% in favor):

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers,

brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.

The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

TAC ACTIONS

Following the opportunity provided for questions and answers, public comment and discussion, the TACs took the following actions:

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendations.

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendation.

NEXT STEPS

Following are the next steps for the Swimming Pool Electrical Safety Project:

- The Commission will evaluate the TACs' (Swimming Pool TAC and Electrical TAC) consensus package of recommendations at the October 15, 2015 meeting.
- The Commission will take the lead with ensuring Code amendments are proposed consistent with any recommendations approved by the Commission regarding swimming pool electrical safety requirements.

ADJOURNMENT

After a determination that a quorum was still present the Swimming Pool TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

After a determination that a quorum was still present the Electrical TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

ATTACHMENT 1
OCTOBER 14, 2015 MEETING AGENDAS

FLORIDA BUILDING COMMISSION
SWIMMING POOL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE ELECTRICAL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES
➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
➢ To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
➢ To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
➢ To Adopt Consensus Recommendations for Submittal to the Commission
➢ To Consider Public Comment
✓ To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

MEETING AGENDA—WEDNESDAY, OCTOBER 14, 2015		
All Agenda Times—Including Adjournment—Are Approximate and Subject to Change		
10:00 AM	**A.)**	**WELCOME AND INTRODUCTIONS**
	B.)	**AGENDA REVIEW AND APPROVAL (October 14, 2015)**
	C.)	**REVIEW AND APPROVAL OF FACILITATOR'S SUMMARY REPORT (September 28, 2015)**
	D.)	**IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS** Requirement for Low Voltage Lighting in Residential Pools for New Construction • Identification, Discussion and Acceptability Ranking of Options In Turn
	E.)	**ADOPTION OF PHASE I CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
12:00 PM	*LUNCH*	
1:00 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN** Identification of Issues and Options, and Acceptability Ranking of Options in Turn • Bonding • Grounding • Retrofitting of Existing Swimming Pools • Education of Contractors and Consumers
3:00 PM	*BREAK*	
3:15 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN CONTINUED**
	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

FLORIDA BUILDING COMMISSION
ELECTRICAL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE SWIMMING POOL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES
➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
➢ To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
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3:00 PM	*BREAK*	
3:15 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN CONTINUED**
	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

ATTACHMENT 2
OPTIONS ACCEPTABILITY RANKING RESULTS

I. PHASE I RECOMMENDATIONS

LOW VOLTAGE LIGHTING IN RESIDENTIAL SWIMMING POOLS FOR NEW CONSTRUCTION

Low Voltage *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements).**				
Swimming Pool TAC (6-3) 67%	5	1	1	2
Electrical TAC (5-4) 56%	4	1	1	3
Option B: **Maintain NEC requirements for new residential pools**				
Swimming Pool TAC (7-2) 78%	6	1	1	1
Swimming Pool TAC (6-3) 67%	5	1	1	2
Revised Ranking *Electrical TAC* (5-4) 56%	4	1	3	1
Option C: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements) for energy conservation purposes.**				
Swimming Pool TAC (7-2) 78%	5	2	1	1
Swimming Pool TAC (4-5) 44%	2	2	2	3
Revised Ranking *Electrical TAC* (6-3) 67%	2	4	0	3
Revised Ranking *Electrical TAC* (5-4) 56%	3	2	1	3
Option D: **Require LED pool lights with plastic niches or without niches in new construction.**				
Swimming Pool TAC (3-6) 33%	2	1	3	3
Electrical TAC (2-7) 22%	1	1	4	3

Option E: **All residential pools shall meet the requirements of code and shall be require a monitoring device to detect stray currents in the water.**				
Swimming Pool TAC (2-7) 22%	**0**	**2**	**5**	**2**
Electrical TAC (3-6) 33%	**1**	**2**	**6**	**0**

II. PHASE II RECOMMENDATIONS

1. BONDING

No specific options were evaluated for bonding.

2. GROUNDING

Grounding *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).**				
Swimming Pool TAC **(9-0) 100%**	**4**	**5**	**0**	**0**
Electrical TAC **(9-0) 100%**	**5**	**4**	**0**	**0**

3. RETROFITTING OF EXISTING POOLS

Retrofitting *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.**				
Swimming Pool TAC (5-3) 63%	**2**	**3**	**3**	**0**
Electrical TAC **(6-2) 75%**	**4**	**2**	**2**	**0**

4. EDUCATION INITIATIVES FOR CONTRACTORS AND CONSUMERS

Education *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Initiate a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.**				
Swimming Pool TAC **(9-0) 100%**	**9**	**0**	**0**	**0**
Electrical TAC **(9-0) 100%**	**8**	**0**	**0**	**0**

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015

RECOMMENDATIONS TO THE FLORIDA BUILDING COMMISSION

MONDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

TAC ACTIONS

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 2 consensus recommendations from the TAC (grounding and education).

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 3 consensus recommendations from the TAC (grounding, education, and existing swimming pools).

Date Submitted	1/1/2016	**Section**	454.2.6.1	**Proponent**	Jennifer Hatfield
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

7060, 7061, and 6991

Summary of Modification

Updates titles of conformance standards.

Rationale

Updates the NSPI 3 standard reference with the new edition title of ANSI/APSP/ICC 3 and updates the APSP 7 standard name as well. This proposal goes with the reference standard proposal to update these two standards to the latest editions.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. Updates existing standards to reflect the titles of the latest editions.

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

None. Updates existing standards to reflect the titles of the latest editions.

Impact to industry relative to the cost of compliance with code

None. Updates existing standards to reflect the titles of the latest editions.

Requirements

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

Yes, keeps up with the latest editions of national consensus standards.

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

Yes, proposal updates standards to latest edition.

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

No, does not discriminate, simply updates standards to latest edition.

Does not degrade the effectiveness of the code

No, does not degrade the effectiveness of the code. Change updates standards to latest edition.

Is the proposed code modification part of a prior code version? No

454.2.6.1 Conformance standard. Design, construction and workmanship shall be in conformity with the requirements of ANSI/APSP/ICC~~NSPI~~ 3, ANSI/APSP/ICC 4, ANSI/ APSP/ICC5, ANSI/APSP/ICC 6, and ANSI/APSP/ICC 7.

454.2.6.2 Required equipment. Every swimming pool shall be equipped complete with approved mechanical equipment consisting of filter, pump, piping valves and component parts.

Exception: Pools with a supply of fresh water equivalent to the volume of the pool in the specified turnover time will be allowed.

454.2.6.3 Water velocity. Pool piping shall be designed so the water velocity will not exceed 10 feet per second (mm/s) for pressure piping and 8 feet per second (mm/s) for suction piping, except that the water velocity shall not exceed 8 feet per second (3048 mm/s) in copper tubing. Main suction outlet velocity must comply with ANSI/APSP/ICC 7.

Exception: Jet inlet fittings shall not be deemed subject to this requirement.

454.2.6.4 Piping to heater. Water flow through the heater, any bypass plumbing installed, any back-siphoning protection, and the use of heat sinks shall be done in accordance with the manufacturer's recommendations.

454.2.6.5 Piping installation. All piping materials shall be installed in strict accordance with the manufacturer's installation standards.

Exception: Primer and glue on exposed above-ground piping not required to be colored.

454.2.6.6 Entrapment protection for suction outlets shall be installed in accordance with requirements of ANSI/APSP 7/ICC.

SW6511

Date Submitted	12/1/2015	**Section**	454	**Proponent**	Centera John
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

6510

Summary of Modification

454.1.2.4 Clarify what is meant by the words "a darker color" when referring to allowable pol surface colors.

Rationale

454.1.2.4 Color – Comment: The first paragraph of 454.1.2.4 relates to the pool surface color. The second paragraph (labeled "Exception") is confusing in that it could be construed as saying that the pool surface may be dark in color.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact

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

No impact

Impact to industry relative to the cost of compliance with code

No impact

Requirements

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

Clarifes allowable pool surface colors which is in the best interest of pblic safety for pool bathers. If the wrong color is used (i.e. a dark color, as the code now states), then it could affect the ability to see a pool bather in distress underwater.

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

Yes. Clarifies the code language to prvent accidnetal wrong color installation of pool or spa durface materials.

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

No, does not discriminate...

Does not degrade the effectiveness of the code

No, does degrade...

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

Proponent bob vincent **Submitted** 2/25/2016 **Attachments** No

SW6511-G1

Comment:

I think this may be a glitch; it is inconsistent with the original meaning, and I missed it on review. The proposal still doesn't make it clear that the dark color is only allowed for tile, and additional costly mistakes could be made thinking it is exception to the floor and wall color or white. Here is the 2009 64E-9, FAC, source language this exception was born out of: 64E-9.006(1)(a) Floors and walls shall be white or light pastel in color and shall have the characteristic of reflecting rather than absorbing light. A minimum 4 inch tile line, each tile a minimum size of one inch on all sides,shall be installed at the water line, but shall not exceed 12 inches in height if a dark color is used. Gutter type pools may substitute 2-inch tile, each a minimum size of one inch on all sides, along the pool wall edge of the gutter lip....

454.1.2.4 Color. Pool floors and walls shall be white or light pastel in color and shall have the characteristic of reflecting rather than absorbing light.

Exception: A dark color **tile** may be used if (1) a tile line [minimum 4 inches (102 mm), maximum 12 inches (305 mm)] is installed at the water line or (2) if 2-inch (51 mm) tile is installed along the pool wall edge of the gutter lip for gutter type pools.

SW6512

Date Submitted	12/1/2015	**Section**	454	**Proponent**	Centera John
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

454.1.6.5.3.1.3 Open-type (rollout) gutters on pools shouls have skid-resistant tile on leading edge, for safety.

Rationale

Open-type (rollout) gutters are required to have a tile on the gutter lip (leading edge) of the gutter. However, this tile is only required to be slip-resistant in the areas directly above the pool steps, as this part of the gutter is now considered a step area.
While the tile used on the edges of underwater benches, steps, and rollout gutters directly above the steps (as described above) require the use of a slip-resistant tile, the rest of the open-type gutter edges may utilize a glazed tile. Considering that in actual use, pool bathers commonly step on the open-type gutter, it would make sense that the gutter lip (edge) of the entire open-type gutter should be required to use a slip-resistant tile, to make it safer. Also, this same slip-resistant tile requirement should be stated if a tile is used on the horizontal surface of the open-type gutter.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
No impact

Impact to building and property owners relative to cost of compliance with code
No impact

Impact to industry relative to the cost of compliance with code
No impact

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Will make pools with open-type (rollout) gutters safer by making the gutter, commonly used to stand on by bathers, safer by requiring all tiles used on the flat areas and leading edge be skid-resistant.

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
No, does not discriminate...

Does not degrade the effectiveness of the code
No, does degrade...

Is the proposed code modification part of a prior code version? No

454.1.6.5.3.1.3 The gutter lip shall be tiled with a minimum of 2-inch (51 mm) tile on the pool wall, each a minimum size of 1 inch (25 mm) on all sides. The back vertical wall of the gutter shall be tiled with glazed tile. **All tile used on the flat, horizontal part, or the leading edge of an open-type gutter, must be slip-resistant.**

Date Submitted	12/1/2015	**Section**	454	**Proponent**	Centera John
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

454.1.2.5.3 Stairs - Remove the 48" restriction for the top step.

Rationale

The notion of the a wide first step being dangerous has no merit as those pools having ledges previously approved have not been cited for any known accidents resulting from their presence. Note the following hotels with ledges that are very popular and safe…
THE DIPLOMAT HOTEL, HOLLYWOOD FLORIDA
THE LOEWS HOTEL SOUTH BEACH
THE DELANO HOTEL SOUTH BEACH

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
No impact to cost relative to enforcement of code.

Impact to building and property owners relative to cost of compliance with code
No cost ompact to building and proeprty owners relative to cost of comoliance with.

Impact to industry relative to the cost of compliance with code
No cost impact to industry relative to the cost of complianec with code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
This change poses no detriment or change to the health, safety, or welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction
Improves the code by allowing greater design flexibility for improved enjoyment by the patron bather of a wider stop step area.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities
No, does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not degrade the effectiveness of the code
No, does not degrade the effectiveness of the code

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW6514-G1

Proponent bob vincent **Submitted** 2/25/2016 **Attachments** No

Comment:

The hotels with a wet tanning deck listed in the Mod received code variances; and no others have been granted. Provisos included: attendant to assure no furniture in the water, plugging their umbrella holes, and multiple inlets in the shelf. We will provide additional information to the FBC prior to the TAC. The reasons for not allowing a step more than 4 feet wide is to prevent safety obstructions in unattended pools, to ascertain adequate recirculation of treated/filtered water in this shallow area since chlorine is depleted rapidly here with the intense sun, other water quality issues. The proposal SW 6584 is similar, and yet the Texas water lounges appear to be simply Florida pool benches, with a different allowed depth.

1st Comment Period History 01/13/2016 - 02/25/2016

SW6514-G2

Proponent Centera John **Submitted** 2/25/2016 **Attachments** No

Comment:

I see no water quality issues that cannot be overcome in shallow water areas that aren't already addressed in Zero Entry pools where the average depth will be very similar to wider first steps.
I don't see any safety issues (obstructions) with wider first steps as it is common practice now for bathers to sit on steps regardless of the width.
I am also not aware of any recorded accidents related to any of the subject pools outlined in the Mod. These pools are embraced by all who use them.

454.1.2.5.3 Stairs. ~~**Stairs shall have a minimum tread width of 10 inches (254 mm) and a maximum width of 48 inches (1219 mm)**~~ **Stairs shall have minimum tread width of 10 (254 mm) inches and maximum tread width of 48 inches (1219 mm), except that the top step, if used as a flat ledge, be allowed to extend outward into the pool as long as other applicable step requirements of this code are met,** for a minimum tread length of 24 inches (610 mm) and a maximum riser height of 10 inches (254 mm). Treads and risers between the top and bottom treads shall be uniform to within $^{1}/_{2}$ inch (12.7 mm) in width and height. The riser heights shall be measured at the marked step edges and the differences in elevation shall be considered the riser heights. The front $^{3}/_{4}$ to 2 inches (19.1 to 51 mm) of the tread and the top 2 inches (51 mm) of the riser shall be tile, dark in color, contrasting with the interior of the pool. Tile shall be slip resistant. Bullnose tile that is slip resistant may be used when the $^{3}/_{4}$-inch (19 mm) segment is placed on the tread or horizontal surface and the 2-inch (51 mm) segment is placed on the riser or vertical surface. Where the gutter is used as the top step, the tile on the gutter for the width of the steps shall be slip resistant. Vinyl liner and fiberglass pools may use other material for the step edge marking, provided the material is permanent, permanently secured, dark in color, nonfading and slip resistant.

Date Submitted	12/7/2015	**Section**	454	**Proponent**	Bryan Holland
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Yes. See Modification #6529 and #6530.

Summary of Modification

This modification adds electrical safety requirements to new swimming pools in response to the Commission's "Swimming Pool Electrical Safety Project" approved recommendations.

Rationale

This modification satisfies the electrical safety recommendation for new public & private (commercial) swimming pools as outlined in the Commission's "Swimming Pool Electrical Safety Project". The new language adds requirements for GFCI protection for outlets supplying electrical equipment at new public & private (commercial) swimming pools.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will have no impact on the local entity relative to enforcement of the code. GFCI protection of certain outlets is already required at new commercial swimming pools.

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

This proposed modification will increase the cost of compliance with the code to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will have no impact on the cost of compliance with the code to industry.

Requirements

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

This proposed modification will increase the health, safety, and welfare of the general public by expanding the swimming pool outlets required to be GFCI protected at new commercial pools.

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

This proposed modification strengthens the code and improves the electrical safety of new commercial pools.

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

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

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

Is the proposed code modification part of a prior code version?

YES

The provisions contained in the proposed amendment are addressed in the applicable international code?

NO

The amendment demonstrates by evidence or data that the geographical jurisdiction of Florida exhibits a need to strengthen the foundation code beyond the needs or regional variation addressed by the foundation code and why the proposed amendment applies to the state?

YES

The proposed amendment was submitted or attempted to be included in the foundation codes to avoid resubmission to the Florida Building Code amendment process?

NO

1st Comment Period History 01/13/2016 - 02/25/2016

Proponent	Thomas Lasprogato	**Submitted**	2/3/2016	**Attachments**	No

SW6531-G1

Comment:

I SUPPORT

1st Comment Period History 01/13/2016 - 02/25/2016

SW6531-G2

Proponent	Vincent Della Croce	Submitted	2/7/2016	Attachments	No

Comment:

Support

1st Comment Period History 01/13/2016 - 02/25/2016

SW6531-G3

Proponent	Jennifer Hatfield	Submitted	2/25/2016	Attachments	No

Comment:

On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted:

1. This proposal is generally consistent with the NEC. In terms of reference regarding prohibition of lights operating at voltages exceeding the LVCL, the NEC Code Panel has continually rejected such proposals. For example, in the 2017 NEC code cycle, NEC Code Panel CMP-17 (jurisdiction over 680) issued a panel statement rejecting Public Input No. 761-NFPA 70-2014 [Section No. 680.23(A)(4)] which proposed to allow only underwater luminaires over 18 Volts ac: “The code already has provisions and protective requirements that provide safe methods when properly installed and maintained, that allow luminaires above the 18 volt requirement desired here.”

2. The voltage needs to be changed to “exceeding the low voltage contact limit” to maintain consistency with the NEC.

454.1.4.1 Electrical equipment and wiring. Electrical equipment wiring and installation, including the bonding and grounding of pool components shall conform with Chapter 27 of the Florida Building Code, Building. Outlets supplying pool equipment and underwater luminaires connected to single-phase, 120 volt through 240 volt branch circuits, rated 15 or 20 amperes, whether by receptacle or by direct connection, shall be provided with ground-fault circuit interrupter protection for personnel.

454.2.16 Electrical. Electrical wiring and equipment shall comply with Chapter 27 of the Florida Building Code, Building. Outlets supplying pool equipment and underwater luminaires connected to single-phase, 120 volt through 240 volt branch circuits, rated 15 or 20 amperes, whether by receptacle or by direct connection, shall be provided with ground-fault circuit interrupter protection for personnel.

Date Submitted	12/17/2015	**Section**	454	**Proponent**	Michael Weinbaum
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

Allows installation of water lounges or sunshelves into commercial pools, per requirements already successfully implemented in Texas.

Rationale

Many resort owners and the landscape architects they hire desire to install pools with water lounges for their customers. These lounges can be made safe with a few rules. The rules submitted here are found in the Texas administrative code, re-written to match the style of the Florida Building Code. These rules have worked for Texas for about 15 years

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

negligible

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

No cost imposed on owners of existing properties, new possibilities for new properties.

Impact to industry relative to the cost of compliance with code

negligible

Requirements

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

Yes. A water lounge, if not properly marked, could hurt swimmers who run into the edge. Rather than ban all water lounges like the current code, calling for proper markings and predictable depth levels will allow bathers to enjoy water lounges but not add any new danger to the public.

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

No.

Does not degrade the effectiveness of the code

No.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW6584-G1

Proponent	Jennifer Hatfield	**Submitted**	2/25/2016	**Attachments**	No

Comment:

The Florida Swimming Pool Association opposes this proposed modification because having an obstruction in the pool is a safety issue. Further algae can grow on these types of lounges, causing someone to slip. In addition, there is no definition for what would constitute a water lounge.

454.1.2.6 Obstructions.
The pool water area shall be unobstructed by any type structure unless justified by engineering design as a part of the recirculation system. Engineering design and material specifications shall show that such structures will not endanger the pool patron, can be maintained in a sanitary condition and will not create a problem for sanitary maintenance of any part of the pool, pool water, or pool facilities. Structures in accord with the above shall not be located in a diving bowl area or within 15 feet (4572 mm) of any pool wall.

Exceptions:

1. ...
2. ...

3. Water Lounges may be installed in areas less than 4 ft (1219 mm) deep. Lounge areas must be a minimum of 20 inches wide and provide a minimum of 10 square feet of horizontal surface adjoining on the edge of the pool over a distance of not less than 3 feet. The lounge area must be horizontal and at a depth of 2 inches to 10 inches below the water surface. The lounge area must have a dark contrasting tile marking on the seat edge extending two inches (51 mm) on the horizontal and vertical surface. Tile shall be slip resistant. Bullnose tile may be substituted and installed in accordance with Section 454.1.2.5.3. Vinyl liner, stainless steel and fiberglass pools may use other material for the lounge edge marking as detailed in Section 454.1.2.3.1, Item 7, provided the material is permanently secured, dark in color, nonfading and slip resistant. Lounges shall not protrude into the 15-foot (4572 mm) clearance requirement of Section 454.1.2.6, nor shall they protrude into a diving bowl.

Date Submitted	11/22/2015	**Section**	2703	**Proponent**	Mo Madani
Chapter	35	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

6491

Summary of Modification

The proposed code change provides for provisions necessary to prevent electrocution in swimming pools by requiring that all pool electrical circuits feeding equipment have GFCI protection.

Rationale

The proposed code change provides for provisions necessary to prevent electrocution in swimming pools by requiring that all pool electrical circuits feeding equipment have GFCI protection. (see uploaded files).

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Further enforcement/inspections would be necessary by the enforcement agencies to implement this prevision.

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

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Impact to industry relative to the cost of compliance with code

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Requirements

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

The proposed code change has the potential reducing electrocution in swimming pools.

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

The proposed code change has the potential reducing electrocution in swimming pools.

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

The proposed code change does not discriminate against materials or products.

Does not degrade the effectiveness of the code

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

Is the proposed code modification part of a prior code version? No

Alternate Language

1st Comment Period History 01/13/2016 - 02/25/2016

6492-A1

Proponent Joe Bigelow **Submitted** 1/12/2016 **Attachments** Yes

Rationale

Test

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Test

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

Test

Impact to industry relative to the cost of compliance with code

Test

Requirements

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

Test

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

Test

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

Test

Does not degrade the effectiveness of the code

Test

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW6492-G1

Proponent	Thomas Lasprogato	Submitted	2/3/2016	Attachments	No

Comment:
NEUTRAL

1st Comment Period History 01/13/2016 - 02/25/2016

SW6492-G2

Proponent	Bryan Holland	Submitted	2/22/2016	Attachments	No

Comment:
While I generally support the concept of this proposed modification, I believe this action is best addressed by modifications #6530 and #6531. Proposals specific to Florida should be contained in the Florida Building Code, so I do not feel we need a modification to the National Electrical Code for this issue.

1st Comment Period History 01/13/2016 - 02/25/2016

SW6492-G3

Proponent	Joe Bigelow	Submitted	2/25/2016	Attachments	Yes

Comment:
Comment submitted by Irv Chazen

1st Comment Period History 01/13/2016 - 02/25/2016

SW6492-G4

Proponent	Jennifer Hatfield	Submitted	2/25/2016	Attachments	No

Comment:
On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted:

1. This proposal, as written, is vague and unenforceable. First, there is no definition of “equipment that could potentially energize a pool.” No voltage level is specified. Further, since any ground fault anywhere on the electrical system is capable of energizing the water in a pool where there is improper, damaged and/or nonexistent equipotential bonding and an electrical connection exists between the pool water and the electrical grounding system (e.g., via the green ground wire in a properly connected metallic underwater light, regardless of voltage, or any bond to water on any pool with a pump), the proposal would require the use of GFCI protection for personnel on each and every electrical circuit on the premises, regardless of whether or not they are associated with the pool. A GFCI does not and cannot detect or protect against current flowing in the green equipment grounding conductor.

2. This proposal would require GFCI protection for personnel on the line side of transformers and power supplies serving low voltage lights and any other low voltage equipment not exceeding the LVCL. A GFCI does not and cannot detect or protect against ground faults on the load (low voltage) side of these devices and therefore this rule would require the unnecessary installation of a GFCI on a low voltage light circuit while not providing any level of protection for the low voltage light. The NEC has historically not required GFCI protection for low voltage lights for this reason.

There is no evidence this proposal would provide additional safety, instead we encourage adoption of the 2014 NEC that provides the latest technologies and safety requirements for pools & spas.

SW6492-G5

Proponent Jennifer Hatfield **Submitted** 2/25/2016 **Attachments** No

Comment:

On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted as a general comment to ALL the swimming pool electrical proposals put forward (ten in total):

1. The appropriate edition of the NEC which should be adopted is the 2014 Edition, which has been in effect since August 21, 2013. Earlier editions do not incorporate changes that reflect and address latest technologies and contain sections that have been eliminated or significantly modified in current editions.

2. The 15 volt ac limit utilized in editions of the NEC prior to the 2011 edition has been superseded by the Low Voltage Contact Limit (LVCL), which addresses current technology. All references to 15 volts ac should be replaced with the LVCL (as defined in the NEC). The LVCL is defined as follows: Low Voltage Contact Limit. A voltage not exceeding the following values:
(1) 15 volts RMS for sinusoidal ac
(2) 21.2 volts peak for nonsinusoidal ac
(3) 30 volts for continuous dc
(4) 12.4 volts peak for dc that is interrupted at a rate of 10 to 200 Hz

With the adoption of the 2014 NEC, Florida will have the edition that provides the latest technologies and safety requirements for pools & spas. Proper education of these requirements and hiring of properly licensed contractors who go through the permitting process is critical.

Chapter 27 Electrical

Add Section 2703 GFCI Protection to read as follows:

Section 2703 GFCI Protection

2703.1 NFPA70-14 National Electric Code, Article 680.21 (Motors), Section 680.21(C) GFCI Protection, is amended to read as follows:

Revise 680.21(C) to read as follows:

(C) GFCI Protection. Outlets supplying pool pump motors to a single phase. 120-volt through 240-volt branch circuits, whether by receptacle or by direct connection, shall be provided with ground-fault circuit-interrupter protection for personnel. All electrical circuits feeding equipment that could potentially energize a pool shall also be provided with ground-fault circuit-interrupter.

Add Section 2703 GFCI Protection to read as follows:

Section 2703 GFCI Protection

2703.1 NFPA70-14 National Electric Code, Article 680.21 (Motors), Section 680.21(C) GFCI Protection, is amended to read as follows:

Revise 680.21(C) to read as follows:

(C) GFCI Protection. Outlets supplying pool pump motors to a single phase. 120-volt through 240-volt branch circuits, whether by receptacle or by direct connection, shall be provided with ground-fault circuit-interrupter protection for personnel. All electrical circuits feeding equipment that could potentially energize a pool shall also be provided with ground-fault circuit-interrupter.

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015 MEETING SUMMARY REPORT

WEDNESDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding swimming pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs voted unanimously to recommend the Commission approve the consensus package of recommendations from the TACs. The TACs' specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring

existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.

PROJECT OVERVIEW

The 2015 Florida Legislature identified the need to evaluate the electrical aspects of swimming pool safety focusing on minimizing electrocution risks linked to swimming pools. In response, the Florida Building Commission approved a research project (technical enrichment) for a *Swimming Pool Electrocution Prevention Study*. In order to implement the project the Commission convened a process to develop recommendations for pool safety focused on the prevention of electrocution in swimming pools. The Commission determined that the project would be evaluated and recommendations developed by convening concurrent meetings of the Commission's Swimming Pool Technical Advisory Committee and Electrical Technical Advisory Committee (TAC). The objective of the project is to evaluate key topical issues, and as appropriate develop code amendment proposals designed to minimize electrocution risks linked to swimming pools.

In response to the Commission's direction the Swimming Pool TAC and Electrical TAC agreed that the initial Phase I scope of the project is to determine whether to recommend a proposed code amendment that would require low voltage lighting in residential swimming pools for new construction. Once the Swimming Pool TAC and the Electrical TAC conclude their evaluation of low voltage lighting they will evaluate additional project relevant topics in Phase II of the project: specifically bonding, grounding, retrofitting of existing pools, and education.

AGENDA ITEM OUTCOMES

OPENING AND MEETING ATTENDANCE

The meeting was opened at 10:00 AM once a quorum was established for the Swimming Pool and Electrical TACs respectively, and the following members participated:

Swimming Pool TAC: James Batts (chair), Jordan Clarkson, Bill Dumbaugh, Kevin Flanagan, John O'Conner, Mark Pabst, Gordon Shepardson, Bob Vincent, and John Wahler. (9 of 11)

Absent Members:
Tom Allen, and Corky Williams.

Electrical TAC: Kevin Flanagan (chair), Neal Burdick, Ken Castronovo, Leonard Devine, Jr. (*Alternate: Nelson Montgomery*), Shane Gerwig, David Rice (*Alternate: Steve Mitchell*), Joe Territo, Clarence Tibbs, and Dwight Wilkes. (9 of 11)

Absent Members:
Oriol Haage, and Roy Van Wyk.

DBPR Staff Present

Norman Bellamy, Chris Burgwald, Jim Hammers, April Hammonds, Mo Madani, and Jim Richmond.

Commissioners Present

Fred Schilling, Jim Schock, and Jeff Stone.

Meeting Facilitation and Reporting

The TAC Chairs meeting was facilitated by Jeff Blair from the FCRC Consensus center at Florida State University. Information at: http://consensus.fsu.edu/

Background and Supporting Documents

The agenda and relevant background and supporting documents are linked to each agenda item. The Agenda URLs for the October 14, 2015 TAC meetings are as follows:

http://www.floridabuilding.org/fbc/commission/FBC_1015/Swimming_Pool_TAC/Swimming_Pool_TAC_Agenda_101415.htm

http://www.floridabuilding.org/fbc/commission/FBC_1015/Electrical_TAC/Electrical_Agenda_TAC_101415.htm

AGENDA REVIEW

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the agenda for the October 24, 2015 meeting as posted/presented.

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the agenda for the October 14, 2015 meeting as posted/presented.

Following are the key agenda items approved for consideration:

- To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
- To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
- To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
- To Adopt Consensus Recommendations for Submittal to the Commission
- To Consider Public Comment
- To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

The complete Agenda is included as *"Attachment 1"* of this report.

(See Attachment 1—Agenda)

APPROVAL OF SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

APPROVAL SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS
Requirement for Low Voltage Lighting in Residential Pools for New Construction

At the September 28, 2015 meeting the Swimming Pool TAC and the Electrical TAC voted to approve in concept a code amendment proposal requiring low voltage lighting in residential pools for new construction, with the understanding that relevant safety data and other documentation would be evaluated prior to a final vote on any recommendation submitted to the Florida Building Commission.

At the October 14, 2015 meeting the TACs were asked to offer options regarding possible requirement for low voltage lighting in residential pools for new construction. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. Jeff explained that members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations.

Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked a series of options regarding low voltage lighting in residential pools for new construction.

The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN

Identification of Issues and Options, and Acceptability Ranking of Options in Turn

Jeff explained that the TACs would address each of the four key issues in turn by topic, and that members would be invited to propose and comment on options before the TAC members ranked them. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. The Phase II topics are Bonding, Grounding, Retrofitting of Existing Swimming Pools, and Education of Contractors and Consumers. Jeff explained that TAC members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations. Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked the proposed options for acceptability. All of the options proposed are included in the ranking results. Following are the option(s) ranked that achieved a consensus level of support (≥ 75% in favor):

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers,

brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.

The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

TAC ACTIONS

Following the opportunity provided for questions and answers, public comment and discussion, the TACs took the following actions:

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendations.

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendation.

NEXT STEPS

Following are the next steps for the Swimming Pool Electrical Safety Project:

- The Commission will evaluate the TACs' (Swimming Pool TAC and Electrical TAC) consensus package of recommendations at the October 15, 2015 meeting.
- The Commission will take the lead with ensuring Code amendments are proposed consistent with any recommendations approved by the Commission regarding swimming pool electrical safety requirements.

ADJOURNMENT

After a determination that a quorum was still present the Swimming Pool TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

After a determination that a quorum was still present the Electrical TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

ATTACHMENT 1
OCTOBER 14, 2015 MEETING AGENDAS

FLORIDA BUILDING COMMISSION
SWIMMING POOL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE ELECTRICAL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES

- ➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
- ➢ To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
- ➢ To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
- ➢ To Adopt Consensus Recommendations for Submittal to the Commission
- ➢ To Consider Public Comment
- ✓ To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

MEETING AGENDA—WEDNESDAY, OCTOBER 14, 2015

All Agenda Times—Including Adjournment—Are Approximate and Subject to Change

10:00 AM	**A.)**	**WELCOME AND INTRODUCTIONS**
	B.)	**AGENDA REVIEW AND APPROVAL (October 14, 2015)**
	C.)	**REVIEW AND APPROVAL OF FACILITATOR'S SUMMARY REPORT (September 28, 2015)**
	D.)	**IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS** Requirement for Low Voltage Lighting in Residential Pools for New Construction • Identification, Discussion and Acceptability Ranking of Options In Turn
	E.)	**ADOPTION OF PHASE I CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
12:00 PM	*LUNCH*	
1:00 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN** Identification of Issues and Options, and Acceptability Ranking of Options in Turn • Bonding • Grounding • Retrofitting of Existing Swimming Pools • Education of Contractors and Consumers
3:00 PM	*BREAK*	
3:15 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN CONTINUED**
	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

FLORIDA BUILDING COMMISSION
ELECTRICAL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE SWIMMING POOL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES
➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
➢ To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
➢ To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
➢ To Adopt Consensus Recommendations for Submittal to the Commission
➢ To Consider Public Comment
✓ To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

MEETING AGENDA—WEDNESDAY, OCTOBER 14, 2015		
All Agenda Times—Including Adjournment—Are Approximate and Subject to Change		
10:00 AM	**A.)**	**WELCOME AND INTRODUCTIONS**
	B.)	**AGENDA REVIEW AND APPROVAL (October 14, 2015)**
	C.)	**REVIEW AND APPROVAL OF FACILITATOR'S SUMMARY REPORT (September 28, 2015)**
	D.)	**IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS** Requirement for Low Voltage Lighting in Residential Pools for New Construction • Identification, Discussion and Acceptability Ranking of Options In Turn
	E.)	**ADOPTION OF PHASE I CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
12:00 PM	*LUNCH*	
1:00 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN** Identification of Issues and Options, and Acceptability Ranking of Options in Turn • Bonding • Grounding • Retrofitting of Existing Swimming Pools • Education of Contractors and Consumers
3:00 PM	*BREAK*	
3:15 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN CONTINUED**
	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

ATTACHMENT 2
OPTIONS ACCEPTABILITY RANKING RESULTS

I. PHASE I RECOMMENDATIONS

LOW VOLTAGE LIGHTING IN RESIDENTIAL SWIMMING POOLS FOR NEW CONSTRUCTION

Low Voltage *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements).**				
Swimming Pool TAC (6-3) 67%	5	1	1	2
Electrical TAC (5-4) 56%	4	1	1	3
Option B: **Maintain NEC requirements for new residential pools**				
Swimming Pool TAC (7-2) 78%	6	1	1	1
Swimming Pool TAC (6-3) 67%	5	1	1	2
Revised Ranking *Electrical TAC* (5-4) 56%	4	1	3	1
Option C: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements) for energy conservation purposes.**				
Swimming Pool TAC (7-2) 78%	5	2	1	1
Swimming Pool TAC (4-5) 44%	2	2	2	3
Revised Ranking *Electrical TAC* (6-3) 67%	2	4	0	3
Revised Ranking *Electrical TAC* (5-4) 56%	3	2	1	3
Option D: **Require LED pool lights with plastic niches or without niches in new construction.**				
Swimming Pool TAC (3-6) 33%	2	1	3	3
Electrical TAC (2-7) 22%	1	1	4	3

Option E: **All residential pools shall meet the requirements of code and shall be require a monitoring device to detect stray currents in the water.**				
Swimming Pool TAC (2-7) 22%	**0**	**2**	**5**	**2**
Electrical TAC (3-6) 33%	**1**	**2**	**6**	**0**

II. PHASE II RECOMMENDATIONS

1. BONDING

No specific options were evaluated for bonding.

2. GROUNDING

Grounding *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).**				
Swimming Pool TAC **(9-0) 100%**	**4**	**5**	**0**	**0**
Electrical TAC **(9-0) 100%**	**5**	**4**	**0**	**0**

3. RETROFITTING OF EXISTING POOLS

Retrofitting *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.**				
Swimming Pool TAC (5-3) 63%	**2**	**3**	**3**	**0**
Electrical TAC **(6-2) 75%**	**4**	**2**	**2**	**0**

4. EDUCATION INITIATIVES FOR CONTRACTORS AND CONSUMERS

Education *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Initiate a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.**				
Swimming Pool TAC **(9-0) 100%**	**9**	**0**	**0**	**0**
Electrical TAC **(9-0) 100%**	**8**	**0**	**0**	**0**

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015

RECOMMENDATIONS TO THE FLORIDA BUILDING COMMISSION

MONDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

TAC ACTIONS

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 2 consensus recommendations from the TAC (grounding and education).

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 3 consensus recommendations from the TAC (grounding, education, and existing swimming pools).

CERTIFIED GUNITE COMPANY, INC. • INCORPORATED IN FLORIDA AUGUST, 1964

February 23, 2016

TO: MEMBERS OF THE FLORIDA BUILDING COMMISSION

Innocent people are being electrocuted in their own backyard swimming pools. The prevention of electrocution is well worth the few additional cost dollars. I do not want the pools that I build, or the pools built by other members of my industry, to cause death or serious injury to the people who only want to enjoy them. I have been building swimming pools in Dade County since 1959. CC# 0605 was issued to me at that time. My company has installed GFCI breakers in the electrical panels together with 12 volt reduction transformers to power 12 volt pool lights in all of the pools we have built for about the past 30 years. We have not had one incident of electric shock or electrocution since then.

The NEC does not provide adequate protection from electrical shock and electrocution. Incidents of electric shock and electrocution have occurred in swimming pools that were built to NEC standards. The installation of GFCI breakers in the electrical panel together with voltage reduction transformers and low volt lights would provide the level of protection needed to prevent further incidents of this type of avoidable accident.

Implementing these code changes would then eliminate the present double standard that makes low volt lighting mandatory in commercial swimming pools, but not in residential swimming pools. We need to place the safety of the people and families who reside in Florida, ahead of efforts to save a few dollars. As lawmakers, you are empowered to change the building code and remove the danger of having people die from electrocution, while having fun in their backyard pools.

Thank you for giving serious consideration to my recommendations and for allowing me to express my opinion to you on this very crucial topic.

CUSTOM POOLS

Irv Chazen, President

13250 S.W. 131 STREET, SUITE 100 • MIAMI, FLORIDA 33186 • PHONE: 305 NEW POOL • FAX: 305 255-9720
www.custompoolsmiami.com

Date Submitted	1/1/2016	**Section**	35	**Proponent**	Jennifer Hatfield
Chapter	35	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

#6991

Summary of Modification

Updates the APSP-3 and APSP-7 referenced standards to the new editions, as well as corrects title of APSP-6 standard.

Rationale

Updates nationally recognized consensus standards to the latest editions available, along with correcting the title of another standard.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. Updates existing standards to latest editions.

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

None. Updates existing standards to latest editions.

Impact to industry relative to the cost of compliance with code

None. Updates existing standards to latest editions.

Requirements

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

Yes, keeps up with the latest editions of national consensus standards.

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

Yes, keeps up with the latest editions of national consensus standards.

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

No, does not discriminate, simply updates standards to latest edition.

Does not degrade the effectiveness of the code

No, does not degrade the effectiveness of the code. Change updates standards to latest edition.

Is the proposed code modification part of a prior code version? No

APSP **Association of Pool and Spa Professionals**

2111 Eisenhower Avenue, Suite 500

Alexandria, VA 22314

Standard reference number	Title	Referenced in code section number
ANSI/APSP/ICC~~NSPI~~ 3—14~~99~~	American National Standard for Permanently Installed Residential Spas and Swim Spas	454.2.6.1
ANSI/APSP/ICC 4—12	American National Standard for Aboveground /Onground Residential Swimming Pools	454.2.6.1
ANSI/APSP/ICC 5-11	American National Standard for Residential Inground Swimming Pools	454.2.6.1
ANSI/APSP/ICC 6—13	American National Standard for Residential Portable Spas and Swim Spas	454.2.6.1
ANSI/APSP/ICC 7—13	American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins	454.2.6.1, 454.2.6.3, 454.2.6.6;
ANSI/APSP 16—11	American National Standard for Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs	454.1.6. 5.10.2

Sub Code: Existing Building

Date Submitted	12/7/2015	**Section**	302.6	**Proponent**	Bryan Holland
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Yes. See Modification #6530 and #6531.

Summary of Modification

This modification adds electrical safety requirements to existing swimming pools in response to the Commission's "Swimming Pool Electrical Safety Project" approved recommendations.

Rationale

This modification satisfies the electrical safety recommendation for existing swimming pools as outlined in the Commission's "Swimming Pool Electrical Safety Project". The new language adds requirements for GFCI protection and equipotential bonding at existing swimming pools undergoing repair, replacement, alterations, or relocation.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will increase the number of permits and inspections required for repairs and alterations of existing swimming pools.

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

This proposed modification will increase the cost of repair and alteration of existing swimming pools by mandating the installation of GFCI devices and requirements for equipotential bonding.

Impact to industry relative to the cost of compliance with code

This proposed modification will not have a negative impact on industry.

Requirements

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

This proposed modification will increase the health, safety, and welfare of the general public by mandating the installation of GFCI devices and requirements for equipotential bonding at existing swimming pools.

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

This proposed modification strengthens the current code and improves the electrical safety of existing swimming pools.

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

This proposed modification does not discriminate against materials, products, methods, or system of construction.

Does not degrade the effectiveness of the code

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

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW6529-G1

Proponent	Thomas Lasprogato	**Submitted**	2/3/2016	**Attachments**	No

Comment:
I SUPPORT

1st Comment Period History 01/13/2016 - 02/25/2016

SW6529-G2

Proponent	Vincent Della Croce	**Submitted**	2/7/2016	**Attachments**	No

Comment:
Support

1st Comment Period History 01/13/2016 - 02/25/2016

Proponent Jennifer Hatfield **Submitted** 2/25/2016 **Attachments** No

SW6529-G3

Comment:

On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted:

1. The proposal is vague and does not clarify if relamping is a criterion for retrofit.

2. The NEC does not allow underwater lights greater than 150V, so the 240V reference is inapplicable.

3. This proposal can accomplish what it appears to intend (as to the details) by simply requiring the lamp installation to comply with the NEC edition adopted at the time of the alteration. The detailed text requirements are unnecessary and redundant.

4. The proposal correctly recognizes that low voltage lights are not protected by GFCIs, and therefore GFCI protection for personnel is not required for low voltage lights.

302.6 Swimming Pools. Outlets supplying repaired, replaced, altered, or relocated pool equipment and underwater luminaires connected to single-phase, 120 volt through 240 volt branch circuits, rated 15 or 20 amperes, whether by receptacle or by direct connection, shall be provided with ground-fault circuit interrupter protection for personnel. Any of the parts specified in 680.26(B)(1) through (B)(7) of the NFPA 70, *National Electrical Code* that are repaired, replaced, altered, or installed new at an existing swimming pool shall be bonded together using solid copper conductors, insulated, covered, or bare, not smaller than 8 AWG or with rigid metal conduit of brass or other identified corrosion-resistant metal. Connections to bonded parts shall be made in accordance with 250.8 of the NFPA 70, *National Electrical Code.* An 8 AWG or larger solid copper bonding conductor provided to reduce voltage gradients in the pool area shall not be required to be extended or attached to remote panelboards, service equipment, or electrodes.Where none of the bonded parts is in direct connection with the pool water, the pool water shall be in direct contact with an approved corrosion-resistant conductive surface that exposes not less than 5800 mm2 (9 in2) of surface area to the pool water at all times. The conductive surface shall be located where it is not exposed to physical damage or dislodgement during usual pool activities, and it shall be bonded in accordance with 680.26(B) of the NFPA 70, *National Electrical Code.*

Date Submitted	11/22/2015	**Section**	413	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

6491
6492

Summary of Modification

The proposed code change requires GFCI protection be provided for replacement of pool pump motors, if not already in place.

Rationale

The proposed code change provides for provisions necessary to prevent electrocution in swimming pools by requiring GFCI protection.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Further enforcement/inspections would be necessary by the enforcement agencies to implement this prevision.

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

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Impact to industry relative to the cost of compliance with code

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Requirements

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

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

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

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

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

The proposed code change does not discriminate against materials or products.

Does not degrade the effectiveness of the code

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW6493-G1

Proponent	Thomas Lasprogato	**Submitted**	2/3/2016	**Attachments**	No

Comment:

NEUTRAL

1st Comment Period History 01/13/2016 - 02/25/2016

SW6493-G2

Proponent	Bryan Holland	**Submitted**	2/22/2016	**Attachments**	No

Comment:

While I generally support the concept of this proposed modification, I believe this action is best addressed by modification #6529.

1st Comment Period History 01/13/2016 - 02/25/2016

SW6493-G3

Proponent Jennifer Hatfield **Submitted** 2/25/2016 **Attachments** No

Comment:

On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted:

1. No enforcement measures are identified.

2. A retrofit program was implemented in California for non-residential pools only. Enforcement was through the county health departments and was of debatable success due to non-uniform electrical training of the health inspectors. An electrical permit and inspection by knowledgeable, properly trained personnel are necessary for viable enforcement.

3. There is no assurance that a homeowner or other untrained personnel will not try to perform the retrofit to avoid costs, resulting in, at best, no improvement in safety and, at worst, introduction of significant safety hazards. In some cases, the retrofit will require modification of the electrical system.

4. If such a program is to be implemented a uniform, effective enforcement procedure must be established. Otherwise, this will quite possibly increase unlicensed activity due to the additional costs that homeowners will otherwise incur.

Section 413 Add to read as follows:

Section 413 Swimming Pool - Electrical

413.1GFCI Protection. Ground-fault Circuit-interrupter shall be provided as follows:

1. Where alteration work includes replacement of pool pump motors, a ground-fault circuit-interrupter shall be provided, if one is not already in place.

2. Where alteration work includes replacement of 120-volt pool lights, a ground-fault circuit-interrupter shall be provided, if one is not already in place.

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015 MEETING SUMMARY REPORT

WEDNESDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding swimming pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs voted unanimously to recommend the Commission approve the consensus package of recommendations from the TACs. The TACs' specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring

existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.

PROJECT OVERVIEW

The 2015 Florida Legislature identified the need to evaluate the electrical aspects of swimming pool safety focusing on minimizing electrocution risks linked to swimming pools. In response, the Florida Building Commission approved a research project (technical enrichment) for a *Swimming Pool Electrocution Prevention Study*. In order to implement the project the Commission convened a process to develop recommendations for pool safety focused on the prevention of electrocution in swimming pools. The Commission determined that the project would be evaluated and recommendations developed by convening concurrent meetings of the Commission's Swimming Pool Technical Advisory Committee and Electrical Technical Advisory Committee (TAC). The objective of the project is to evaluate key topical issues, and as appropriate develop code amendment proposals designed to minimize electrocution risks linked to swimming pools.

In response to the Commission's direction the Swimming Pool TAC and Electrical TAC agreed that the initial Phase I scope of the project is to determine whether to recommend a proposed code amendment that would require low voltage lighting in residential swimming pools for new construction. Once the Swimming Pool TAC and the Electrical TAC conclude their evaluation of low voltage lighting they will evaluate additional project relevant topics in Phase II of the project: specifically bonding, grounding, retrofitting of existing pools, and education.

AGENDA ITEM OUTCOMES

OPENING AND MEETING ATTENDANCE

The meeting was opened at 10:00 AM once a quorum was established for the Swimming Pool and Electrical TACs respectively, and the following members participated:

Swimming Pool TAC: James Batts (chair), Jordan Clarkson, Bill Dumbaugh, Kevin Flanagan, John O'Conner, Mark Pabst, Gordon Shepardson, Bob Vincent, and John Wahler. (9 of 11)

Absent Members:
Tom Allen, and Corky Williams.

Electrical TAC: Kevin Flanagan (chair), Neal Burdick, Ken Castronovo, Leonard Devine, Jr. (*Alternate: Nelson Montgomery*), Shane Gerwig, David Rice (*Alternate: Steve Mitchell*), Joe Territo, Clarence Tibbs, and Dwight Wilkes. (9 of 11)

Absent Members:
Oriol Haage, and Roy Van Wyk.

DBPR Staff Present

Norman Bellamy, Chris Burgwald, Jim Hammers, April Hammonds, Mo Madani, and Jim Richmond.

Commissioners Present

Fred Schilling, Jim Schock, and Jeff Stone.

Meeting Facilitation and Reporting

The TAC Chairs meeting was facilitated by Jeff Blair from the FCRC Consensus center at Florida State University. Information at: http://consensus.fsu.edu/

CONSENSUS CENTER

Background and Supporting Documents

The agenda and relevant background and supporting documents are linked to each agenda item. The Agenda URLs for the October 14, 2015 TAC meetings are as follows:

http://www.floridabuilding.org/fbc/commission/FBC_1015/Swimming_Pool_TAC/Swimming_Pool_TAC_Agenda_101415.htm

http://www.floridabuilding.org/fbc/commission/FBC_1015/Electrical_TAC/Electrical_Agenda_TAC_101415.htm

AGENDA REVIEW

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the agenda for the October 24, 2015 meeting as posted/presented.

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the agenda for the October 14, 2015 meeting as posted/presented.

Following are the key agenda items approved for consideration:

- To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
- To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
- To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
- To Adopt Consensus Recommendations for Submittal to the Commission
- To Consider Public Comment
- To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

The complete Agenda is included as *"Attachment 1"* of this report.

(See Attachment 1—Agenda)

APPROVAL OF SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

APPROVAL SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS
Requirement for Low Voltage Lighting in Residential Pools for New Construction

At the September 28, 2015 meeting the Swimming Pool TAC and the Electrical TAC voted to approve in concept a code amendment proposal requiring low voltage lighting in residential pools for new construction, with the understanding that relevant safety data and other documentation would be evaluated prior to a final vote on any recommendation submitted to the Florida Building Commission.

At the October 14, 2015 meeting the TACs were asked to offer options regarding possible requirement for low voltage lighting in residential pools for new construction. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. Jeff explained that members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations.

Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked a series of options regarding low voltage lighting in residential pools for new construction.

The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN

Identification of Issues and Options, and Acceptability Ranking of Options in Turn

Jeff explained that the TACs would address each of the four key issues in turn by topic, and that members would be invited to propose and comment on options before the TAC members ranked them. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. The Phase II topics are Bonding, Grounding, Retrofitting of Existing Swimming Pools, and Education of Contractors and Consumers. Jeff explained that TAC members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations. Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked the proposed options for acceptability. All of the options proposed are included in the ranking results. Following are the option(s) ranked that achieved a consensus level of support (≥ 75% in favor):

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers,

brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.
The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

TAC ACTIONS

Following the opportunity provided for questions and answers, public comment and discussion, the TACs took the following actions:

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendations.

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendation.

NEXT STEPS

Following are the next steps for the Swimming Pool Electrical Safety Project:

- The Commission will evaluate the TACs' (Swimming Pool TAC and Electrical TAC) consensus package of recommendations at the October 15, 2015 meeting.
- The Commission will take the lead with ensuring Code amendments are proposed consistent with any recommendations approved by the Commission regarding swimming pool electrical safety requirements.

ADJOURNMENT

After a determination that a quorum was still present the Swimming Pool TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

After a determination that a quorum was still present the Electrical TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

ATTACHMENT 1
OCTOBER 14, 2015 MEETING AGENDAS

FLORIDA BUILDING COMMISSION
SWIMMING POOL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE ELECTRICAL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES
➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report) ➢ To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction) ➢ To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education) ➢ To Adopt Consensus Recommendations for Submittal to the Commission ➢ To Consider Public Comment ✓ To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

MEETING AGENDA—WEDNESDAY, OCTOBER 14, 2015		
All Agenda Times—Including Adjournment—Are Approximate and Subject to Change		
10:00 AM	**A.)**	**WELCOME AND INTRODUCTIONS**
	B.)	**AGENDA REVIEW AND APPROVAL (October 14, 2015)**
	C.)	**REVIEW AND APPROVAL OF FACILITATOR'S SUMMARY REPORT (September 28, 2015)**
	D.)	**IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS** Requirement for Low Voltage Lighting in Residential Pools for New Construction • Identification, Discussion and Acceptability Ranking of Options In Turn
	E.)	**ADOPTION OF PHASE I CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
12:00 PM	*LUNCH*	
1:00 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN** Identification of Issues and Options, and Acceptability Ranking of Options in Turn • Bonding • Grounding • Retrofitting of Existing Swimming Pools • Education of Contractors and Consumers
3:00 PM	*BREAK*	
3:15 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN CONTINUED**
	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

FLORIDA BUILDING COMMISSION
ELECTRICAL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE SWIMMING POOL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES
➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
➢ To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
➢ To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
➢ To Adopt Consensus Recommendations for Submittal to the Commission
➢ To Consider Public Comment
✓ To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

MEETING AGENDA—WEDNESDAY, OCTOBER 14, 2015		
All Agenda Times—Including Adjournment—Are Approximate and Subject to Change		
10:00 AM	**A.)**	**WELCOME AND INTRODUCTIONS**
	B.)	**AGENDA REVIEW AND APPROVAL (October 14, 2015)**
	C.)	**REVIEW AND APPROVAL OF FACILITATOR'S SUMMARY REPORT (September 28, 2015)**
	D.)	**IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS** Requirement for Low Voltage Lighting in Residential Pools for New Construction • Identification, Discussion and Acceptability Ranking of Options In Turn
	E.)	**ADOPTION OF PHASE I CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
12:00 PM	*LUNCH*	
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3:00 PM	*BREAK*	
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~5:00 PM	*J.)*	*ADJOURN*

ATTACHMENT 2
OPTIONS ACCEPTABILITY RANKING RESULTS

I. PHASE I RECOMMENDATIONS

LOW VOLTAGE LIGHTING IN RESIDENTIAL SWIMMING POOLS FOR NEW CONSTRUCTION

Low Voltage *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements).**				
Swimming Pool TAC (6-3) 67%	5	1	1	2
Electrical TAC (5-4) 56%	4	1	1	3
Option B: **Maintain NEC requirements for new residential pools**				
Swimming Pool TAC (7-2) 78%	6	1	1	1
Swimming Pool TAC (6-3) 67%	5	1	1	2
Revised Ranking *Electrical TAC* (5-4) 56%	4	1	3	1
Option C: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements) for energy conservation purposes.**				
Swimming Pool TAC (7-2) 78%	5	2	1	1
Swimming Pool TAC (4-5) 44%	2	2	2	3
Revised Ranking *Electrical TAC* (6-3) 67%	2	4	0	3
Revised Ranking *Electrical TAC* (5-4) 56%	3	2	1	3
Option D: **Require LED pool lights with plastic niches or without niches in new construction.**				
Swimming Pool TAC (3-6) 33%	2	1	3	3
Electrical TAC (2-7) 22%	1	1	4	3

Option E: **All residential pools shall meet the requirements of code and shall be require a monitoring device to detect stray currents in the water.**				
Swimming Pool TAC (2-7) 22%	**0**	**2**	**5**	**2**
Electrical TAC (3-6) 33%	**1**	**2**	**6**	**0**

II. PHASE II RECOMMENDATIONS

1. BONDING

No specific options were evaluated for bonding.

2. GROUNDING

Grounding *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).**				
Swimming Pool TAC **(9-0) 100%**	**4**	**5**	**0**	**0**
Electrical TAC **(9-0) 100%**	**5**	**4**	**0**	**0**

3. RETROFITTING OF EXISTING POOLS

Retrofitting *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.**				
Swimming Pool TAC (5-3) 63%	**2**	**3**	**3**	**0**
Electrical TAC **(6-2) 75%**	**4**	**2**	**2**	**0**

4. EDUCATION INITIATIVES FOR CONTRACTORS AND CONSUMERS

Education *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Initiate a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.**				
Swimming Pool TAC **(9-0) 100%**	**9**	**0**	**0**	**0**
Electrical TAC **(9-0) 100%**	**8**	**0**	**0**	**0**

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015

RECOMMENDATIONS TO THE FLORIDA BUILDING COMMISSION

MONDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

TAC ACTIONS

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 2 consensus recommendations from the TAC (grounding and education).

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 3 consensus recommendations from the TAC (grounding, education, and existing swimming pools).

Date Submitted	11/22/2015	**Section**	709	**Proponent**	Mo Madani
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

6491, 6492, 6493

Summary of Modification

The proposed code change requires GFCI protection be provided for replacement of pool pump motors, if not already in place.

Rationale

The proposed code change provides for provisions necessary to prevent electrocution in swimming pools. Also, see upleaded files.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Further enforcement/inspections would be necessary by the enforcement agencies to implement this prevision.

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

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Impact to industry relative to the cost of compliance with code

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Requirements

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

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

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

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

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

The proposed code change does not discriminate against materials or products.

Does not degrade the effectiveness of the code

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW6494-G1

Proponent	Thomas Lasprogato	**Submitted**	2/3/2016	**Attachments**	No

Comment:

NEUTRAL

1st Comment Period History 01/13/2016 - 02/25/2016

SW6494-G2

Proponent	Bryan Holland	**Submitted**	2/22/2016	**Attachments**	No

Comment:

While I generally support the concept of this proposed modification, I believe this action is best addressed by modification #6529.

1st Comment Period History 01/13/2016 - 02/25/2016

Proponent Jennifer Hatfield **Submitted** 2/25/2016 **Attachments** No

SW6494-G3

Comment:

On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted:

1. No enforcement measures are identified.

2. A retrofit program was implemented in California for non-residential pools only. Enforcement was through the county health departments and was of debatable success due to non-uniform electrical training of the health inspectors. An electrical permit and inspection by knowledgeable, properly trained personnel are necessary for viable enforcement.

3. There is no assurance that a homeowner or other untrained personnel will not try to perform the retrofit to avoid costs, resulting in, at best, no improvement in safety and, at worst, introduction of significant safety hazards. In some cases, the retrofit will require modification of the electrical system.

4. If such a program is to be implemented a uniform, effective enforcement procedure must be established. Otherwise, this will quite possibly increase unlicensed activity due to the additional costs that homeowners will otherwise incur.

Section 709 Add to read as follows:

Section 709 Swimming Pool - Electrical

709.1 GFCI Protection. Ground-fault Circuit-interrupter shall be provided as follows:

1. Where alteration work includes replacement of pool pump motors, a ground-fault circuit-interrupter shall be provided, if one is not already in place.
2. Where alteration work includes replacement of 120-volt pool lights, a ground-fault circuit-interrupter shall be provided, if one is not already in place.

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015 MEETING SUMMARY REPORT

WEDNESDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding swimming pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs voted unanimously to recommend the Commission approve the consensus package of recommendations from the TACs. The TACs' specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring

existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.

PROJECT OVERVIEW

The 2015 Florida Legislature identified the need to evaluate the electrical aspects of swimming pool safety focusing on minimizing electrocution risks linked to swimming pools. In response, the Florida Building Commission approved a research project (technical enrichment) for a *Swimming Pool Electrocution Prevention Study*. In order to implement the project the Commission convened a process to develop recommendations for pool safety focused on the prevention of electrocution in swimming pools. The Commission determined that the project would be evaluated and recommendations developed by convening concurrent meetings of the Commission's Swimming Pool Technical Advisory Committee and Electrical Technical Advisory Committee (TAC). The objective of the project is to evaluate key topical issues, and as appropriate develop code amendment proposals designed to minimize electrocution risks linked to swimming pools.

In response to the Commission's direction the Swimming Pool TAC and Electrical TAC agreed that the initial Phase I scope of the project is to determine whether to recommend a proposed code amendment that would require low voltage lighting in residential swimming pools for new construction. Once the Swimming Pool TAC and the Electrical TAC conclude their evaluation of low voltage lighting they will evaluate additional project relevant topics in Phase II of the project: specifically bonding, grounding, retrofitting of existing pools, and education.

AGENDA ITEM OUTCOMES

OPENING AND MEETING ATTENDANCE

The meeting was opened at 10:00 AM once a quorum was established for the Swimming Pool and Electrical TACs respectively, and the following members participated:

Swimming Pool TAC: James Batts (chair), Jordan Clarkson, Bill Dumbaugh, Kevin Flanagan, John O'Conner, Mark Pabst, Gordon Shepardson, Bob Vincent, and John Wahler. (9 of 11)

Absent Members:
Tom Allen, and Corky Williams.

Electrical TAC: Kevin Flanagan (chair), Neal Burdick, Ken Castronovo, Leonard Devine, Jr. (*Alternate: Nelson Montgomery*), Shane Gerwig, David Rice (*Alternate: Steve Mitchell*), Joe Territo, Clarence Tibbs, and Dwight Wilkes. (9 of 11)

Absent Members:
Oriol Haage, and Roy Van Wyk.

DBPR Staff Present

Norman Bellamy, Chris Burgwald, Jim Hammers, April Hammonds, Mo Madani, and Jim Richmond.

Commissioners Present

Fred Schilling, Jim Schock, and Jeff Stone.

Meeting Facilitation and Reporting

The TAC Chairs meeting was facilitated by Jeff Blair from the FCRC Consensus center at Florida State University. Information at: http://consensus.fsu.edu/

CONSENSUS CENTER

Background and Supporting Documents

The agenda and relevant background and supporting documents are linked to each agenda item. The Agenda URLs for the October 14, 2015 TAC meetings are as follows:

http://www.floridabuilding.org/fbc/commission/FBC_1015/Swimming_Pool_TAC/Swimming_Pool_TAC_Agenda_101415.htm

http://www.floridabuilding.org/fbc/commission/FBC_1015/Electrical_TAC/Electrical_Agenda_TAC_101415.htm

AGENDA REVIEW

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the agenda for the October 24, 2015 meeting as posted/presented.

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the agenda for the October 14, 2015 meeting as posted/presented.

Following are the key agenda items approved for consideration:

- To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
- To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
- To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
- To Adopt Consensus Recommendations for Submittal to the Commission
- To Consider Public Comment
- To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

The complete Agenda is included as *"Attachment 1"* of this report.

(See Attachment 1—Agenda)

APPROVAL OF SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

APPROVAL SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS
Requirement for Low Voltage Lighting in Residential Pools for New Construction

At the September 28, 2015 meeting the Swimming Pool TAC and the Electrical TAC voted to approve in concept a code amendment proposal requiring low voltage lighting in residential pools for new construction, with the understanding that relevant safety data and other documentation would be evaluated prior to a final vote on any recommendation submitted to the Florida Building Commission.

At the October 14, 2015 meeting the TACs were asked to offer options regarding possible requirement for low voltage lighting in residential pools for new construction. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. Jeff explained that members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations.

Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked a series of options regarding low voltage lighting in residential pools for new construction.

The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN

Identification of Issues and Options, and Acceptability Ranking of Options in Turn

Jeff explained that the TACs would address each of the four key issues in turn by topic, and that members would be invited to propose and comment on options before the TAC members ranked them. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. The Phase II topics are Bonding, Grounding, Retrofitting of Existing Swimming Pools, and Education of Contractors and Consumers. Jeff explained that TAC members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations. Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked the proposed options for acceptability. All of the options proposed are included in the ranking results. Following are the option(s) ranked that achieved a consensus level of support (≥ 75% in favor):

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers,

brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.

The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

TAC ACTIONS

Following the opportunity provided for questions and answers, public comment and discussion, the TACs took the following actions:

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendations.

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendation.

NEXT STEPS

Following are the next steps for the Swimming Pool Electrical Safety Project:

- The Commission will evaluate the TACs' (Swimming Pool TAC and Electrical TAC) consensus package of recommendations at the October 15, 2015 meeting.
- The Commission will take the lead with ensuring Code amendments are proposed consistent with any recommendations approved by the Commission regarding swimming pool electrical safety requirements.

ADJOURNMENT

After a determination that a quorum was still present the Swimming Pool TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

After a determination that a quorum was still present the Electrical TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

ATTACHMENT 1
OCTOBER 14, 2015 MEETING AGENDAS

FLORIDA BUILDING COMMISSION
SWIMMING POOL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE ELECTRICAL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES
➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
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MEETING AGENDA—WEDNESDAY, OCTOBER 14, 2015		
All Agenda Times—Including Adjournment—Are Approximate and Subject to Change		
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	C.)	**REVIEW AND APPROVAL OF FACILITATOR'S SUMMARY REPORT (September 28, 2015)**
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	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

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1:00 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN** Identification of Issues and Options, and Acceptability Ranking of Options in Turn • Bonding • Grounding • Retrofitting of Existing Swimming Pools • Education of Contractors and Consumers
3:00 PM	*BREAK*	
3:15 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN CONTINUED**
	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

ATTACHMENT 2
OPTIONS ACCEPTABILITY RANKING RESULTS

I. PHASE I RECOMMENDATIONS

LOW VOLTAGE LIGHTING IN RESIDENTIAL SWIMMING POOLS FOR NEW CONSTRUCTION

Low Voltage *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements).**				
Swimming Pool TAC (6-3) 67%	5	1	1	2
Electrical TAC (5-4) 56%	4	1	1	3
Option B: **Maintain NEC requirements for new residential pools**				
Swimming Pool TAC (7-2) 78%	6	1	1	1
Swimming Pool TAC (6-3) 67%	5	1	1	2
Revised Ranking *Electrical TAC* (5-4) 56%	4	1	3	1
Option C: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements) for energy conservation purposes.**				
Swimming Pool TAC (7-2) 78%	5	2	1	1
Swimming Pool TAC (4-5) 44%	2	2	2	3
Revised Ranking *Electrical TAC* (6-3) 67%	2	4	0	3
Revised Ranking *Electrical TAC* (5-4) 56%	3	2	1	3
Option D: **Require LED pool lights with plastic niches or without niches in new construction.**				
Swimming Pool TAC (3-6) 33%	2	1	3	3
Electrical TAC (2-7) 22%	1	1	4	3

Option E: **All residential pools shall meet the requirements of code and shall be require a monitoring device to detect stray currents in the water.**				
Swimming Pool TAC (2-7) 22%	**0**	**2**	**5**	**2**
Electrical TAC (3-6) 33%	**1**	**2**	**6**	**0**

II. PHASE II RECOMMENDATIONS

1. BONDING

No specific options were evaluated for bonding.

2. GROUNDING

Grounding *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).**				
Swimming Pool TAC **(9-0) 100%**	**4**	**5**	**0**	**0**
Electrical TAC **(9-0) 100%**	**5**	**4**	**0**	**0**

3. RETROFITTING OF EXISTING POOLS

Retrofitting *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.**				
Swimming Pool TAC (5-3) 63%	**2**	**3**	**3**	**0**
Electrical TAC **(6-2) 75%**	**4**	**2**	**2**	**0**

4. EDUCATION INITIATIVES FOR CONTRACTORS AND CONSUMERS

Education *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Initiate a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.**				
Swimming Pool TAC **(9-0) 100%**	**9**	**0**	**0**	**0**
Electrical TAC **(9-0) 100%**	**8**	**0**	**0**	**0**

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015

RECOMMENDATIONS TO THE FLORIDA BUILDING COMMISSION

MONDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

TAC ACTIONS

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 2 consensus recommendations from the TAC (grounding and education).

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 3 consensus recommendations from the TAC (grounding, education, and existing swimming pools).

Sub Code: Residential

SW6491

Date Submitted	11/22/2015	**Section**	4203.1.3	**Proponent**	Mo Madani
Chapter	42	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Summary of Modification

The proposed code change provides for provisions necessary to prevent electrocution in swimming pools by requiring that all pool electrical circuits feeding equipment have GFCI protection.

Rationale

As directed by the Commission, the said code change was submitted to improve/prevent electrocution in swimming pools. Also, see uploaded support files.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Further enforcement/inspections would be necessary by the enforcement agencies to implement this prevision.

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

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Impact to industry relative to the cost of compliance with code

The proposed code change has the potential of adding cost to construction and at the same time reducing electrocution in swimming pools.

Requirements

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

The proposed code change has the potential reducing electrocution in swimming pools.

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

The proposed code change has the potential reducing electrocution in swimming pools.

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

The proposed code change does not discriminate against materials or products.

Does not degrade the effectiveness of the code

The proposed code change improves the code by providing provisions for reducing electrocution in swimming pools.

Is the proposed code modification part of a prior code version? No

1st Comment Period History 01/13/2016 - 02/25/2016

SW6491-G2

Proponent	Thomas Lasprogato	**Submitted**	2/3/2016	**Attachments**	No

Comment:

NEUTRAL

1st Comment Period History 01/13/2016 - 02/25/2016

SW6491-G3

Proponent	Bryan Holland	**Submitted**	2/22/2016	**Attachments**	No

Comment:

While I generally support the concept of this proposed modification, I believe this action is best addressed by modifications #6530 and #6531.

1st Comment Period History 01/13/2016 - 02/25/2016

SW6491-G4

Proponent Jennifer Hatfield **Submitted** 2/25/2016 **Attachments** No

Comment:

On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted:

1. This proposal, as written, is vague and unenforceable. First, there is no definition of “equipment that could potentially energize a pool.” No voltage level is specified. Further, since any ground fault anywhere on the electrical system is capable of energizing the water in a pool where there is improper, damaged and/or nonexistent equipotential bonding and an electrical connection exists between the pool water and the electrical grounding system (e.g., via the green ground wire in a properly connected metallic underwater light, regardless of voltage, or any bond to water on any pool with a pump), the proposal would require the use of GFCI protection for personnel on each and every electrical circuit on the premises, regardless of whether or not they are associated with the pool. A GFCI does not and cannot detect or protect against current flowing in the green equipment grounding conductor.

2. This proposal would require GFCI protection for personnel on the line side of transformers and power supplies serving low voltage lights and any other low voltage equipment not exceeding the LVCL. A GFCI does not and cannot detect or protect against ground faults on the load (low voltage) side of these devices and therefore this rule would require the unnecessary installation of a GFCI on a low voltage light circuit while not providing any level of protection for the low voltage light. The NEC has historically not required GFCI protection for low voltage lights for this reason.

There is no evidence this proposal would provide additional safety, instead we encourage adoption of the 2014 NEC that provides the latest technologies and safety requirements for pools & spas.

Chapter 42 Swimming Pools

Revise Section E4203.1.3 to read as follows:

E4203.1.3 GFCI protection. All 15- and 20-ampere, single phase, 125-volt receptacles located within 20 feet (6096 mm) of the inside walls of pools and outdoor spas and hot tubs shall be protected by a ground-fault circuit interrupter. Outlets supplying pool pump motors supplied

from branch circuits rated at 120 volts through 240 volts, single phase, whether by receptacle or direct connection, shall be provided with ground-fault circuit-interrupter protection for personnel. <u>All electrical circuits feeding equipment that could potentially energize a pool shall also be provided with ground-fault circuit-interrupter.</u> [680.21(C) and 680.22(A)(4)]

Text of Modification

Chapter 42 Swimming Pools

Revise Section E4203.1.3 to read as follows:

E4203.1.3 GFCI protection. All 15- and 20-ampere, single phase, 125-volt receptacles located within 20 feet (6096 mm) of the inside walls of pools and outdoor spas and hot tubs shall be protected by a ground-fault circuit interrupter. Outlets supplying pool pump motors supplied

from branch circuits rated at 120 volts through 240 volts, single phase, whether by receptacle or direct connection, shall be provided with ground-fault circuit-interrupter protection for personnel. All electrical circuits feeding equipment that could potentially energize a pool shall also be provided with ground-fault circuit-interrupter. [680.21(C) and 680.22(A)(4)]

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015 MEETING SUMMARY REPORT

WEDNESDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding swimming pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs voted unanimously to recommend the Commission approve the consensus package of recommendations from the TACs. The TACs' specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring

existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.

PROJECT OVERVIEW

The 2015 Florida Legislature identified the need to evaluate the electrical aspects of swimming pool safety focusing on minimizing electrocution risks linked to swimming pools. In response, the Florida Building Commission approved a research project (technical enrichment) for a *Swimming Pool Electrocution Prevention Study*. In order to implement the project the Commission convened a process to develop recommendations for pool safety focused on the prevention of electrocution in swimming pools. The Commission determined that the project would be evaluated and recommendations developed by convening concurrent meetings of the Commission's Swimming Pool Technical Advisory Committee and Electrical Technical Advisory Committee (TAC). The objective of the project is to evaluate key topical issues, and as appropriate develop code amendment proposals designed to minimize electrocution risks linked to swimming pools.

In response to the Commission's direction the Swimming Pool TAC and Electrical TAC agreed that the initial Phase I scope of the project is to determine whether to recommend a proposed code amendment that would require low voltage lighting in residential swimming pools for new construction. Once the Swimming Pool TAC and the Electrical TAC conclude their evaluation of low voltage lighting they will evaluate additional project relevant topics in Phase II of the project: specifically bonding, grounding, retrofitting of existing pools, and education.

AGENDA ITEM OUTCOMES

OPENING AND MEETING ATTENDANCE

The meeting was opened at 10:00 AM once a quorum was established for the Swimming Pool and Electrical TACs respectively, and the following members participated:

Swimming Pool TAC: James Batts (chair), Jordan Clarkson, Bill Dumbaugh, Kevin Flanagan, John O'Conner, Mark Pabst, Gordon Shepardson, Bob Vincent, and John Wahler. (9 of 11)

Absent Members:
Tom Allen, and Corky Williams.

Electrical TAC: Kevin Flanagan (chair), Neal Burdick, Ken Castronovo, Leonard Devine, Jr. (*Alternate: Nelson Montgomery*), Shane Gerwig, David Rice (*Alternate: Steve Mitchell*), Joe Territo, Clarence Tibbs, and Dwight Wilkes. (9 of 11)

Absent Members:
Oriol Haage, and Roy Van Wyk.

DBPR Staff Present

Norman Bellamy, Chris Burgwald, Jim Hammers, April Hammonds, Mo Madani, and Jim Richmond.

Commissioners Present

Fred Schilling, Jim Schock, and Jeff Stone.

Meeting Facilitation and Reporting

The TAC Chairs meeting was facilitated by Jeff Blair from the FCRC Consensus center at Florida State University. Information at: http://consensus.fsu.edu/

CONSENSUS CENTER

Background and Supporting Documents

The agenda and relevant background and supporting documents are linked to each agenda item. The Agenda URLs for the October 14, 2015 TAC meetings are as follows:

http://www.floridabuilding.org/fbc/commission/FBC_1015/Swimming_Pool_TAC/Swimming_Pool_TAC_Agenda_101415.htm

http://www.floridabuilding.org/fbc/commission/FBC_1015/Electrical_TAC/Electrical_Agenda_TAC_101415.htm

AGENDA REVIEW

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the agenda for the October 24, 2015 meeting as posted/presented.

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the agenda for the October 14, 2015 meeting as posted/presented.

Following are the key agenda items approved for consideration:

- To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
- To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
- To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
- To Adopt Consensus Recommendations for Submittal to the Commission
- To Consider Public Comment
- To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

The complete Agenda is included as *"Attachment 1"* of this report.

(See Attachment 1—Agenda)

APPROVAL OF SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

APPROVAL SEPTEMBER 28, 2015 MEETING SUMMARY REPORT

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the Meeting Summary Report for the September 28, 2015 meeting as posted/presented.

IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS
Requirement for Low Voltage Lighting in Residential Pools for New Construction

At the September 28, 2015 meeting the Swimming Pool TAC and the Electrical TAC voted to approve in concept a code amendment proposal requiring low voltage lighting in residential pools for new construction, with the understanding that relevant safety data and other documentation would be evaluated prior to a final vote on any recommendation submitted to the Florida Building Commission.

At the October 14, 2015 meeting the TACs were asked to offer options regarding possible requirement for low voltage lighting in residential pools for new construction. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. Jeff explained that members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations.

Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked a series of options regarding low voltage lighting in residential pools for new construction.

The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN

Identification of Issues and Options, and Acceptability Ranking of Options in Turn

Jeff explained that the TACs would address each of the four key issues in turn by topic, and that members would be invited to propose and comment on options before the TAC members ranked them. In addition, the public was invited to comment on the options and/or suggest additional options prior to the TACs ranking them for acceptability. The Phase II topics are Bonding, Grounding, Retrofitting of Existing Swimming Pools, and Education of Contractors and Consumers. Jeff explained that TAC members would be asked to rank each proposed option in turn utilizing a four-point acceptability ranking scale where 4 = acceptable, 3 = minor reservations, 2 = major reservations, and 1 = unacceptable. Following discussion and refinement of options, members may be asked to do additional rankings of proposed options if requested by a *TAC* member. Members should be prepared to offer specific refinements to address their reservations. Once ranked, options with a 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus recommendations. The *TACs'* consensus recommendations will be submitted to the Commission for consideration.

Following the opportunity provided for questions and answers, public comment, and discussion, the TACs ranked the proposed options for acceptability. All of the options proposed are included in the ranking results. Following are the option(s) ranked that achieved a consensus level of support (≥ 75% in favor):

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers,

brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

Note: The Swimming Pool TAC vote 5-3 (63%) in favor of the option.
The complete Options Acceptability Ranking Results are included as *"Attachment 2"* of this report.

(See Attachment 2—Ranking Results)

TAC ACTIONS

Following the opportunity provided for questions and answers, public comment and discussion, the TACs took the following actions:

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendations.

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the TACs' package of consensus recommendation.

NEXT STEPS

Following are the next steps for the Swimming Pool Electrical Safety Project:

- The Commission will evaluate the TACs' (Swimming Pool TAC and Electrical TAC) consensus package of recommendations at the October 15, 2015 meeting.
- The Commission will take the lead with ensuring Code amendments are proposed consistent with any recommendations approved by the Commission regarding swimming pool electrical safety requirements.

ADJOURNMENT

After a determination that a quorum was still present the Swimming Pool TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

After a determination that a quorum was still present the Electrical TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 3:30 PM on Wednesday, October 14, 2015.

ATTACHMENT 1
OCTOBER 14, 2015 MEETING AGENDAS

FLORIDA BUILDING COMMISSION
SWIMMING POOL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE ELECTRICAL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES
➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
➢ To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
➢ To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
➢ To Adopt Consensus Recommendations for Submittal to the Commission
➢ To Consider Public Comment
✓ To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

MEETING AGENDA—WEDNESDAY, OCTOBER 14, 2015		
All Agenda Times—Including Adjournment—Are Approximate and Subject to Change		
10:00 AM	**A.)**	**WELCOME AND INTRODUCTIONS**
	B.)	**AGENDA REVIEW AND APPROVAL (October 14, 2015)**
	C.)	**REVIEW AND APPROVAL OF FACILITATOR'S SUMMARY REPORT (September 28, 2015)**
	D.)	**IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS** Requirement for Low Voltage Lighting in Residential Pools for New Construction • Identification, Discussion and Acceptability Ranking of Options In Turn
	E.)	**ADOPTION OF PHASE I CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
12:00 PM	*LUNCH*	
1:00 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN** Identification of Issues and Options, and Acceptability Ranking of Options in Turn • Bonding • Grounding • Retrofitting of Existing Swimming Pools • Education of Contractors and Consumers
3:00 PM	*BREAK*	
3:15 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN CONTINUED**
	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

FLORIDA BUILDING COMMISSION
ELECTRICAL TECHNICAL ADVISORY COMMITTEE (TAC)
CONCURRENTLY WITH THE SWIMMING POOL TAC
OCTOBER 14, 2015—MEETING II

PLAZA HISTORIC BEACH RESORT AND SPA
600 NORTH ATLANTIC BOULEVARD—DAYTONA BEACH, FLORIDA 33706

MEETING OBJECTIVES
➢ To Approve Regular Procedural Topics (Agenda and Meeting Summary Report)
➢ To Discuss and Approve Phase I Recommendations (Low Voltage Lighting in Residential Pools for New Construction)
➢ To Discuss Phase II Topics (Bonding, Grounding, Retrofitting of Existing Pools, and Education)
➢ To Adopt Consensus Recommendations for Submittal to the Commission
➢ To Consider Public Comment
✓ To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

MEETING AGENDA—WEDNESDAY, OCTOBER 14, 2015		
All Agenda Times—Including Adjournment—Are Approximate and Subject to Change		
10:00 AM	**A.)**	**WELCOME AND INTRODUCTIONS**
	B.)	**AGENDA REVIEW AND APPROVAL (October 14, 2015)**
	C.)	**REVIEW AND APPROVAL OF FACILITATOR'S SUMMARY REPORT (September 28, 2015)**
	D.)	**IDENTIFICATION, DISCUSSION, AND ACCEPTABILITY RANKING OF PHASE I OPTIONS** Requirement for Low Voltage Lighting in Residential Pools for New Construction • Identification, Discussion and Acceptability Ranking of Options In Turn
	E.)	**ADOPTION OF PHASE I CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
12:00 PM	*LUNCH*	
1:00 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN** Identification of Issues and Options, and Acceptability Ranking of Options in Turn • Bonding • Grounding • Retrofitting of Existing Swimming Pools • Education of Contractors and Consumers
3:00 PM	*BREAK*	
3:15 PM	**F.**	**DISCUSSION AND EVALUATION OF PHASE II TOPICS IN TURN CONTINUED**
	G.)	**ADOPTION OF ANY PHASE II CONSENSUS RECOMMENDATIONS FOR SUBMITTAL TO THE COMMISSION**
	H.)	**GENERAL PUBLIC COMMENT**
	I.)	**NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED**
~5:00 PM	*J.)*	*ADJOURN*

ATTACHMENT 2
OPTIONS ACCEPTABILITY RANKING RESULTS

I. PHASE I RECOMMENDATIONS

LOW VOLTAGE LIGHTING IN RESIDENTIAL SWIMMING POOLS FOR NEW CONSTRUCTION

Low Voltage *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements).**				
Swimming Pool TAC (6-3) 67%	5	1	1	2
Electrical TAC (5-4) 56%	4	1	1	3
Option B: **Maintain NEC requirements for new residential pools**				
Swimming Pool TAC (7-2) 78%	6	1	1	1
Swimming Pool TAC (6-3) 67%	5	1	1	2
Revised Ranking *Electrical TAC* (5-4) 56%	4	1	3	1
Option C: **Require low voltage lighting in residential pools for new construction (Miami-Dade requirements) for energy conservation purposes.**				
Swimming Pool TAC (7-2) 78%	5	2	1	1
Swimming Pool TAC (4-5) 44%	2	2	2	3
Revised Ranking *Electrical TAC* (6-3) 67%	2	4	0	3
Revised Ranking *Electrical TAC* (5-4) 56%	3	2	1	3
Option D: **Require LED pool lights with plastic niches or without niches in new construction.**				
Swimming Pool TAC (3-6) 33%	2	1	3	3
Electrical TAC (2-7) 22%	1	1	4	3

Option E: **All residential pools shall meet the requirements of code and shall be require a monitoring device to detect stray currents in the water.**				
Swimming Pool TAC (2-7) 22%	**0**	**2**	**5**	**2**
Electrical TAC (3-6) 33%	**1**	**2**	**6**	**0**

II. PHASE II RECOMMENDATIONS

1. BONDING

No specific options were evaluated for bonding.

2. GROUNDING

Grounding *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).**				
Swimming Pool TAC **(9-0) 100%**	**4**	**5**	**0**	**0**
Electrical TAC **(9-0) 100%**	**5**	**4**	**0**	**0**

3. RETROFITTING OF EXISTING POOLS

Retrofitting *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Require existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.**				
Swimming Pool TAC (5-3) 63%	**2**	**3**	**3**	**0**
Electrical TAC **(6-2) 75%**	**4**	**2**	**2**	**0**

4. EDUCATION INITIATIVES FOR CONTRACTORS AND CONSUMERS

Education *October 14, 2015*	*4=acceptable*	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Option A: **Initiate a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.**				
Swimming Pool TAC **(9-0) 100%**	**9**	**0**	**0**	**0**
Electrical TAC **(9-0) 100%**	**8**	**0**	**0**	**0**

FLORIDA BUILDING COMMISSION

SWIMMING POOL ELECTRICAL SAFETY PROJECT

CONCURRENT MEETING OF THE SWIMMING POOL TAC AND ELECTRICAL TAC

OCTOBER 14, 2015

RECOMMENDATIONS TO THE FLORIDA BUILDING COMMISSION

MONDAY, OCTOBER 14, 2015

MEETING SUMMARY AND OVERVIEW

On Wednesday, October 14, 2015 the Swimming Pool TAC and Electrical TAC met concurrently in Daytona Beach to develop recommendations regarding pool safety issues focused on the prevention of electrocution in swimming pools. At the initial scoping meeting held on September 28, 2015 the TACs agreed that the project scope was to focus on evaluation of whether to recommend a code amendment requiring low voltage lighting in residential pools for new construction (Phase I). In addition, it was agreed that additional electrical pool safety relevant topical issues including bonding, grounding, retrofitting of existing pools, and education would be considered as a second phase of the project (Phase II). At the October 14, 2015 meeting the TACs proposed and acceptability ranked options for low voltage lighting in residential pools for new construction. In addition, the TACs evaluated proposed options to address the other key topical issues, and ultimately developed a consensus package of recommendations for consideration by the Florida Building Commission. The TACs specific recommendations are as follow:

Grounding

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission charge staff to work with the TAC chairs and in consultation with stakeholders to formulate a code amendment requiring that all electrical circuits feeding equipment that could potentially energize a pool have GFCI protection for new residential and commercial swimming pools (the goal is to fill in any gaps in the current Code).

Education

The Electrical TAC and the Swimming Pool TAC voted unanimously to recommend that the Commission support a comprehensive educational effort to ensure there is a consistent message to enhance pool electrical safety issues for existing and new pools by working with existing resources including educational providers and associations. The effort should include defining the problems, identifying solutions and communicating a consistent message to stakeholders (contractors, consumers, home inspectors, pool maintenance providers, etc.) through training courses, flyers, brochures, websites, etc. Key issues for education messaging include lighting, bonding, grounding, GFCI, maintenance of existing pools, and monitoring devices to detect stray currents in the pool water, etc.

Existing Swimming Pools

The Electrical TAC voted 6-2 in favor (75%), to recommend the Commission charge staff to work with the TAC chair and in consultation with stakeholders to formulate a code amendment requiring existing commercial and residential swimming pools to have GFCI protection for replacement pool pump motors, if not already in place; to provide GFCI protection for the replacement of 120 volt pool lights when they are replaced; and, as part of the close out inspection ensuring that the existing bonding system is complete and terminated properly.

TAC ACTIONS

MOTION—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 2 consensus recommendations from the TAC (grounding and education).

MOTION—The Electrical Pool TAC voted unanimously, 8 - 0 in favor, to recommend the Commission approve the 3 consensus recommendations from the TAC (grounding, education, and existing swimming pools).

Date Submitted	12/7/2015	**Section**	4501.16	**Proponent**	Bryan Holland
Chapter	45	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Yes. See Modification #6529 and #6531.

Summary of Modification

This modification adds electrical safety requirements to new swimming pools in response to the Commission's "Swimming Pool Electrical Safety Project" approved recommendations.

Rationale

This modification satisfies the electrical safety recommendation for new private (residential) swimming pools as outlined in the Commission's "Swimming Pool Electrical Safety Project". The new language adds requirements for GFCI protection for outlets supplying electrical equipment at new private (residential) swimming pools.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will have a minimal impact on the local entity relative to code enforcement. GFCI protection is already required for certain swimming pool equipment. This modification expands GFCI protection to all pool equipment branch-circuit outlets.

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

This proposed modification will increase the cost of compliance with the code to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will have a minimal cost of compliance with the code to industry.

Requirements

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

This proposed modification will increase the health, safety, and welfare of the general public by expanding GFCI protection to other circuits supplying swimming pool equipment.

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

This proposed modification strengthens the code and improves the electrical safety at new swimming pools.

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

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

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

Is the proposed code modification part of a prior code version?

YES

The provisions contained in the proposed amendment are addressed in the applicable international code?

NO

The amendment demonstrates by evidence or data that the geographical jurisdiction of Florida exihibits a need to strengthen the foundation code beyond the needs or regional variation addressed by the foundation code and why the proposed amendment applies to the state?

YES

The proposed amendment was submitted or attempted to be included in the foundation codes to avoid resubmission to the Florida Building Code amendment process?

NO

1st Comment Period History 01/13/2016 - 02/25/2016

SW6530-G1

Proponent	Thomas Lasprogato	Submitted	2/3/2016	Attachments	No

Comment:
I SUPPORT

1st Comment Period History 01/13/2016 - 02/25/2016

SW6530-G2

Proponent	Vincent Della Croce	Submitted	2/7/2016	Attachments	No

Comment:
Support

1st Comment Period History 01/13/2016 - 02/25/2016

SW6530-G3

Proponent	Jennifer Hatfield	Submitted	2/25/2016	Attachments	No

Comment:
On behalf of the Association of Pool & Spa Professionals' Technical Committee, which includes E.P. Hamilton III, Ph.D., who sits on Panel 17 of the National Electrical Code, the following is submitted:

1. This proposal is generally consistent with the NEC. In terms of reference regarding prohibition of lights operating at voltages exceeding the LVCL, the NEC Code Panel has continually rejected such proposals. For example, in the 2017 NEC code cycle, NEC Code Panel CMP-17 (jurisdiction over 680) issued a panel statement rejecting Public Input No. 761-NFPA 70-2014 [Section No. 680.23(A)(4)] which proposed to allow only underwater luminaires over 18 Volts ac: “The code already has provisions and protective requirements that provide safe methods when properly installed and maintained, that allow luminaires above the 18 volt requirement desired here.”

2. The voltage needs to be changed to “exceeding the low voltage contact limit” to maintain consistency with the NEC.

R4501.16 Electrical. Electrical wiring and equipment shall comply with the *Florida Building Code*. Outlets supplying pool equipment and underwater luminaires connected to single-phase, 120 volt through 240 volt branch circuits, rated 15 or 20 amperes, whether by receptacle or by direct connection, shall be provided with ground-fault circuit interrupter protection for personnel.

Date Submitted	1/1/2016	**Section**	4501.6.1	**Proponent**	Jennifer Hatfield
Chapter	45	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

6991, 7060

Summary of Modification

Updates titles of conformance standards.

Rationale

Updates the NSPI 3 standard reference with the new edition title of ANSI/APSP/ICC 3 and updates the APSP 7 standard name as well. This proposal goes with the reference standard proposal to update these two standards to the latest editions.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. Updates existing standards to reflect the titles of the latest editions.

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

None. Updates existing standards to reflect the titles of the latest editions.

Impact to industry relative to the cost of compliance with code

None. Updates existing standards to reflect the titles of the latest editions.

Requirements

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

Yes, keeps up with the latest editions of national consensus standards.

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

Yes, proposal updates standards to latest edition.

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

No, does not discriminate, simply updates standards to latest edition.

Does not degrade the effectiveness of the code

No, does not degrade the effectiveness of the code. Change updates standards to latest edition.

Is the proposed code modification part of a prior code version? No

R4501.6.1 Conformance standard. Design, construction and workmanship shall be in conformity with the requirements of ANSI/APSP/ICC~~NSPI~~ 3; ANSI/APSP/ICC 4; ANSI/ APSP/ICC 5; ANSI/APSP/ICC 6; and ANSI/APSP/ICC 7.

R4501.6.2 Required equipment. Every swimming pool shall be equipped complete with approved mechanical equipment consisting of filter, pump, piping valves and component parts.

Exception: Pools with a supply of fresh water equivalent to the volume of the pool in the specified turnover time will be allowed.

R4501.6.3 Water velocity. Pool piping shall be designed so the water velocity will not exceed 10 feet per second (3048 mm/s) for pressure piping and 8 feet per second (2438 mm/s) for suction piping, except that the water velocity shall not exceed 8 feet per second (2438 mm/s) in copper tubing. Main suction outlet velocity must comply with ANSI/APSP/ICC 7.

Exception: Jet inlet fittings shall not be deemed subject to this requirement.

R4501.6.4 Piping to heater. Water flow through the heater, any bypass plumbing installed, any back-siphoning protection, and the use of heat sinks shall be done in accordance with the manufacturer's recommendations.

R4501.6.5 Piping installation. All piping materials shall be installed in strict accordance with the manufacturer's installation standards.

Exception: Primer and glue on exposed aboveground piping not required to be colored.

R4501.6.6 Entrapment protection. Entrapment protection for suction outlets shall be installed in accordance with requirements of ANSI/APSP/ICC 7.

Date Submitted	1/1/2016	**Section**	46	**Proponent**	Jennifer Hatfield
Chapter	2712	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Related Modifications

Submitting same for Chapter 35-Reference Standards of Building

Summary of Modification

Updates the APSP-3 and APSP-7 referenced standards to the new editions, as well as corrects title of APSP-6 standard.

Rationale

Updates nationally recognized consensus standards to the latest editions available, along with correcting the title of another standard.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. Updates existing standards to latest editions.

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

None. Updates existing standards to latest editions.

Impact to industry relative to the cost of compliance with code

None. Updates existing standards to latest editions.

Requirements

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

Yes, keeps up with the latest editions of national consensus standards.

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

Yes, keeps up with the latest editions of national consensus standards.

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

No, does not discriminate, simply updates standards to latest edition.

Does not degrade the effectiveness of the code

No, does not degrade the effectiveness of the code. Change updates standards to latest edition.

Is the proposed code modification part of a prior code version? No

APSP **Association of Pool and Spa Professionals**

2111 Eisenhower Avenue, Suite 500

Alexandria, VA 22314

Standard reference number	Title	Referenced in code section number
ANSI/APSP/ICC~~NSPI~~ 3—14~~99~~	American National Standard for Permanently Installed Residential Spas and Swim Spas	R4501.6.1
ANSI/APSP/ICC 4—12	American National Standard for Aboveground /Onground Residential Swimming Pools	R4501.6.1
ANSI/APSP/ICC 5—11	American National Standard for Residential Inground Swimming Pools	R4501.6.1
ANSI/APSP/ICC 6—13	American National Standard for Residential Portable Spas and Swim Spas	R4501.6.1
ANSI/APSP/ICC 7—13~~06~~	American National Standard for Suction Entrapment Avoidance In Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins	R4501.6.1, R4501.6.3, R4501.6.6