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BUILDING  
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Florida Department of  
Business  
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**FACILITATOR'S SUMMARY REPORT OF THE  
JULY 18, 2016  
CALDER SLOAN SWIMMING POOL ELECTRICAL  
SAFETY TASK FORCE  
GAINESVILLE, FLORIDA**

**PROCESS DESIGN, CONSENSUS-BUILDING AND FACILITATION BY**



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**FLORIDA BUILDING COMMISSION**  
**CALDER SLOAN SWIMMING POOL ELECTRICAL SAFETY TASK FORCE**  
**JULY 18, 2016 FACILITATOR’S MEETING SUMMARY REPORT**

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## **OVERVIEW OF TASK FORCE'S KEY ACTIONS AND DECISIONS**

**MONDAY, JULY 18, 2016**

### **I. 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 was 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 was 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 concluded their evaluation of low voltage lighting they would then evaluate additional project relevant topics in Phase II of the project: specifically bonding, grounding, retrofitting of existing pools, and education. The TACs met for the second time on October 14, 2015 and developed a consensus package of recommendations for both phases of the project (Phase I and Phase II). At their October 15, 2015 meeting the Commission voted unanimously to adopt the Swimming Pool TAC's and Electrical TAC's swimming pool safety consensus package of recommendations focused on the prevention of electrocution in swimming pools. The Code amendments were proposed for inclusion in the *Florida Building Code, 6<sup>th</sup> Edition (2017)* and currently the TACs'

recommendations for relevant proposed Code modifications are recommended for approval and will be considered by the Florida Building Commission on August 16, 2016.

Subsequent to the first two phases of the project, in a concurrent meeting conducted during the TACs' review of proposed Code amendments for the 2017 Code Update Process the Swimming Pool and the Electrical TACs discussed the Calder Sloan Swimming Pool Electrical-Safety Task Force that was established within the Florida Building Commission by the 2016 Florida Legislature and decided that the two TACs should meet concurrently to further evaluate the issue. The TACs expressed the desire to consider any potential Code modifications based on the best available science and data, and agreed to make their recommendations to the Commission accordingly.

As the next step in the process the Commission convened a concurrent meeting of the Swimming Pool TAC and Electrical TAC on May 24, 2016 to discuss recommendations to the Commission regarding how best to proceed with the evaluation of pool electrical safety. In response, the TACs' voted unanimously to recommend the Commission convene the Calder Sloan Swimming Pool Electrical Safety Task Force after July 1, 2017, and to charge the Task Force with reviewing the issues identified during public comment provided during the May 24, 2016 teleconference meeting. The Commission approved the recommendation at the June 8, 2016 meeting, and the Task Force will convene after July 1, 2016.

**Section 30 of HB 535** establishes within the Florida Building Commission the Calder Sloan Swimming Pool Electrical-Safety Task Force as follows:

- (1) The purpose of the task force is to study standards for grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools, especially with regard to minimizing risks of electrocutions linked to swimming pools. The task force shall submit a report of its findings, including recommended revisions to state law, if any, to the Governor, the President of the Senate, and the Speaker of the House of Representatives by November 1, 2016.
- (2) The task force shall consist of the swimming pool and electrical technical advisory committees of the Florida Building Commission.
- (3) The task force shall be chaired by the swimming pool contractor appointed to the Florida Building Commission pursuant to s. 553.74, Florida Statutes.
- (4) The Florida Building Commission shall provide such staff, information, and other assistance as is reasonably necessary to assist the task force in carrying out its responsibilities.
- (5) Members of the task force shall serve without compensation.
- (6) The task force shall meet as often as necessary to fulfill its responsibilities. Meetings may be conducted by conference call, teleconferencing, or similar technology.
- (7) This section expires December 31, 2016.

On July 18, 2016, in advance of convening the Calder Sloan Swimming Pool Electrical Safety Task Force, the Commission conducted a concurrent meeting of the Swimming Pool and Electrical TACs for the purpose of providing comments on public comments submitted regarding the TACs' recommendations for code modifications for enhancements to swimming pool electrical safety requirements for the 6<sup>th</sup> Edition (2017) Update to the Florida Building Code. The Swimming Pool and Electrical TACs' recommended the Commission's approval of eight code modifications related to grounding, bonding, lighting, and/or wiring. The Florida Building Commission will consider the TACs' recommendations and comments on August 16, 2016.

Following is a summary of the TACs' recommendations for enhancements to swimming pool electrical safety requirements regarding code modifications for the 6<sup>th</sup> Edition (2017) Update to the Florida Building Code:

<b>Modification 6498:</b> 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. [Building Code]	
<b>Swimming Pool TAC</b>	<b>Electrical TAC</b>
Unanimous in support of alternative language	Unanimous in support of alternative language
<b>Modification 6496:</b> The proposed code change requires that GFCI protection be provided for replacement of pool pump motors, if not already in place. [Building Code]	
<b>Swimming Pool TAC</b>	<b>Electrical TAC</b>
Unanimous in support of alternative language	Unanimous in support of alternative language
<b>Modification 6531:</b> This modification adds electrical safety requirements to new swimming pools in response to the Commission's Swimming Pool Electrical Safety Project's approved recommendations. [Building Code]	
<b>Swimming Pool TAC</b>	<b>Electrical TAC</b>
Unanimous in support of alternative language	In support of alternative language (≥ 75% in favor)
<b>Modification 6493:</b> The proposed code change requires GFCI protection be provided for replacement of pool pump motors, if not already in place. [Existing Building Code]	
<b>Swimming Pool TAC</b>	<b>Electrical TAC</b>
Unanimous in support of alternative language	In support of alternative language (≥ 75% in favor)
<b>Modification 6494:</b> The proposed code change requires that GFCI protection be provided for replacement of pool pump motors, if not already in place. [Existing Building Code Level 1 Alterations]	
<b>Swimming Pool TAC</b>	<b>Electrical TAC</b>
Unanimous in support of alternative language	In support of alternative language (≥ 75% in favor)
<b>Modification 6530:</b> This modification adds electrical safety requirements to new swimming pools in response to the Commission's Swimming Pool Electrical Safety Project's approved recommendations. [Residential Code]	
<b>Swimming Pool TAC</b>	<b>Electrical TAC</b>
Unanimous in support of alternative language	In support of alternative language (≥ 75% in favor)
<b>Modification 6529:</b> This modification adds electrical safety requirements to existing swimming pools in response to the Commission's Swimming Pool Electrical Safety Project's approved recommendations. [Existing Building Code]	
<b>Swimming Pool TAC</b>	<b>Electrical TAC</b>
In support of alternative language (≥ 75% in favor)	In support of alternative language (≥ 75% in favor)
<b>Modification 6452:</b> This modification restores the electrical requirements for underwater luminaires to the national standard by removing redundant and unnecessary language. [Building Code]	
<b>Swimming Pool TAC</b>	<b>Electrical TAC</b>
Unanimous in support of modification as submitted	In support of modification (≥ 75% in favor)

The Calder Sloan Swimming Pool Electrical Safety Task Force was convened on July 18, 2016 at the conclusion of the TAC code modification review meeting to review the recommendations made and actions taken relevant to swimming pool electrical safety resulting from the previous three concurrent meetings of the Swimming Pool and Electrical TACs. It should be noted that the Calder Sloan Swimming Pool Safety Task Force is comprised of the members of the Swimming Pool and Electrical TACs. The Task Force evaluated the seven topical issues identified by public comment (at the May 24, 2016 concurrent meeting of the Swimming Pool and Electrical TACs) and subsequently approved by the

Commission (June 8, 2016). In addition, the Task Force evaluated pool electrical safety standards related to: grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools pursuant to and consistent with their Legislative charge.

## **II. TASK FORCE PROJECT SCOPE AND PURPOSE**

The scope of the *Calder Sloan Swimming Pool Electrical Safety Task Force* is as follows:

The Swimming Pool TAC and the Electrical TAC shall serve as the Task Force. The Task Force shall review the Commission's pool electrical safety enhancement actions to date, the status of the eight current proposed code modifications to the 2017 Code Update, and the seven topical issues identified by public comment (at the May 24, 2016 concurrent meeting of the Swimming Pool and Electrical TACs) and approved by the Commission (June 8, 2016). In addition, the Task Force shall specifically evaluate pool electrical safety standards related to: grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools. The Task Force shall deliver their consensus recommendations to the Florida Building Commission in advance of the November 1, 2016 deadline established for the Commission to report back to the Governor and the Florida Legislature.

## **III. TASK FORCE MEETING SUMMARY AND OVERVIEW**

At the July 18, 2016 meeting the Task Force received an overview and briefing on the Task Force's scope and purpose; a review of the Commission's decision-making procedures and polices including applicability of the Sunshine Law; a review of relevant recommendations developed as a result of the three previous concurrent meetings of the Swimming Pool and Electrical TACs; and, an update on the status of the eight swimming pool safety enhancement code modifications proposed for the 6<sup>th</sup> Edition (2017) Update to the Florida Building Code. Specific Task Force actions include the following unanimous recommendations to the Florida Building Commission:

1. Recommending to the Florida Legislature the funding of a science based study to determine the extent of swimming pool electrical problems, and how any resultant problems identified should be addressed using the best science, data, practices and technologies available.
2. Recommending a mandatory requirement that 1-hour of the Chapter 489, F.S., licensed pool contractor's 14 hours of CE requirements shall include an electrical education class regarding electrical installations related to swimming pools. This should be implemented working with the appropriate DBPR licensing boards.
3. Recommending increased funding for combating unlicensed activity and increased funding for educational outreach similar to the educational materials currently being worked on by the Commission (designed to ensure consumers are aware of the pitfalls and dangers of not hiring licensed contractors and not following code requirements).
4. Recommending that Section 515.33, F.S. (Information required to be furnished to buyers) or the appropriate statutory section(s), be amended to require that swimming pool electrical safety information as well as the information currently required pursuant to Section 515.33, F.S. be provided to buyers at the time of the sale of any property that has a swimming pool or spa.

Additional Task Force recommendations include the following:

5. Supporting the evaluation of new technologies designed to prevent electrocution in swimming pools, and the development of criteria and/or guidelines for any additional electrical inspections at the time of property sale, and recommending that they should be evaluated in the context of the overarching Task Force's recommendation to fund a study (Recommendation 1).
6. Recommending that the Florida Building Code remain current with the latest edition of the NEC to ensure the latest electrical pool safety requirements are in the Florida Building Code (it was noted that new NEC provisions related to swimming pool electrical safety were few, and some suggested that adopting the NEC would need to be evaluated by the Commission in the context of all of the changes between editions).
7. Supporting the efforts currently underway to seek clarification regarding the scope of work for licensed swimming pool contractors related to installing swimming pool equipment.
8. Supporting the actions taken by the Florida Building Commission regarding education initiatives including development and dissemination of the Swimming Pool Electrical Safety Fact Sheet, the Swimming Pool Electrical Safety Self Assessment questionnaire, and the Swimming Pool Electrical Safety 1-hour education course.
9. Agreeing that swimming pool electrical safety enhancements regarding the technical requirements for grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools were addressed in the context of the eight code modifications currently proposed for approval by the Florida Building Commission for inclusion in the 6<sup>th</sup> Edition (2017) Update to the Florida Building Code. (*See Attachment 4*)
10. Supporting the recommendations developed by the three concurrent meetings of the Swimming Pool TAC and Electrical TAC and subsequently approved by the Florida Building Commission regarding education initiatives (Recommendation 8) and code enhancements (Recommendation 9).

Finally, the Calder Sloan Swimming Pool Electrical Safety Task Force voted unanimously to adopt the package of consensus recommendation outlined in the nine recommendations above, and subsequently having determined that the Task Force completed its Legislative assignment, the Task Force was adjourned with no further business pending.

*(Attachment 4—Concurrent Swimming Pool and Electrical TACs Meeting Summary Reports)*

#### **IV. WELCOME AND INTRODUCTIONS**

Jeff Blair, Commission Facilitator, opened the meeting by conducting a roll call and determined that a quorum was present. Chairman Batts welcomed Task Force members, staff and the public to the meeting.

#### **TASK FORCE MEMBER ATTENDANCE**

The following Task Force members attended the Monday, July 18, 2016 meeting:

James Batts (chair), Neil Burdick, Ken Castronovo, Jordan Clarkson (alternate: John Clarkson), Bill Dumbaugh, Kevin Flanagan, Shane Gerwig, Oriol Haage (alternate: Vincent Della Croce), Bryan Holland, John O'Connor, Mark Pabst, David Rice, Gordon Shepardson (alternate: John Centera), Joe Territo, Clarence Tibbs, Bob Vincent, John Wahler, and Dwight Wilkes. (*18 of 21 Workgroup members attended*)

*(Attachment 2—Task Force Membership)*

## **DBPR STAFF PRESENT**

Norman Bellamy, Jim Hammers, April Hammonds, Chris Howell, Mo Madani, Marlita Peters, and Jim Richmond.

## **PUBLIC PARTICIPATION**

A list of public participants is included as “Attachment 5” of this Report.  
(Attachment 5—Public Participation)

## **MEETING FACILITATION**

The meeting was facilitated by Jeff Blair from the FCRC Consensus Center at Florida State University. Information at: <http://consensus.fsu.edu/>



CONSENSUS CENTER

## **PROJECT WEBPAGE**

Information on the Florida Building Commission project, including agenda packets, meeting reports, and related documents may be found at the Commission Webpage. Located at the following URL: <http://floridabuilding.org/c/default.aspx>

## **V. AGENDA REVIEW AND APPROVAL**

The Task Force voted unanimously, 18 - 0 in favor, to approve the agenda for the July 18, 2016 meeting as presented/posted. Following are the key agenda items approved for consideration:

- To Convene Calder Sloan Swimming Pool Electrical Safety Task Force
- To Review Task Force Charge, Scope and Operational Procedures
- To Evaluate Topical Issues Identified From Public Comment
- To Evaluate Standards for Grounding, Bonding, Lighting, Wiring, and All Electrical Aspects for Safety
- To Discuss and Evaluate Level of Acceptability of Proposed Options
- To Consider Public Comment
- To Review Next Steps

### *Amendments to the Posted Agenda:*

There were no amendments to the posted/presented Agenda.

(Attachment 4—July 18, 2016 Task Force Agenda)

## **VI. REVIEW OF PROCEDURAL ISSUES**

Jeff Blair reviewed the Task Force’s decision-making and procedural policies and procedures noting they are the same as the Commission’s, including the applicability of the Sunshine Law, and answered member’s questions. Jeff noted that the Commission’s task forces and committees function using a consensus based decision-making process. General consensus is a participatory process whereby, on matters of substance, the members strive for agreements which all of the members can accept, support,



live with or agree not to oppose. *In instances where, after vigorously exploring possible ways to enhance the members' support for the final decision on a recommendation, and the Task Force finds that 100% acceptance or support is not achievable, final decisions will require at least 75% favorable vote of all members present and voting.* This super majority decision rule underscores the importance of actively developing consensus throughout the process on substantive issues with the participation of all members and which all can live with. In instances where the Task Force finds that even 75% acceptance or support is not achievable, publication of recommendations will include documentation of the differences and the options that were considered for which there is more than 50% support from the Task Force.

#### *Sunshine Law Requirements Applicability to Task Force Members*

April Hammonds, FBC Legal Counsel, explained that Task Force members are subject to the requirements of Florida's Government in the Sunshine Law, commonly referred to as the Sunshine Law (Section 286.011 F.S.), and may not discuss with each other, outside of properly noticed meetings, issues that may foreseeably come before the Task Force for discussion.

### **VII. REVIEW OF KEY TOPICAL ISSUES FOR TASK FORCE EVALUATION**

Mo Madani, FBC Technical Manager, reviewed HB 535 and the status to date of actions related to swimming pool electrical safety and answered member's questions. All relevant files are linked to the following URL:

[http://www.floridabuilding.org/fbc/commission/FBC\\_0716/Swimming\\_Pool/Swimming\\_Pool\\_Agenda\\_07-18-16.htm](http://www.floridabuilding.org/fbc/commission/FBC_0716/Swimming_Pool/Swimming_Pool_Agenda_07-18-16.htm)

*(Attachment 5—Pool Safety Project Status Update)*

### **VIII. EVALUATION OF OPTIONS AND TASK FORCE RECOMMENDATIONS**

Jeff Blair reviewed a list of issues for Task Force evaluation provided as pages 5-6 of the Agenda Packet. The Task Force reviewed, evaluated and made recommendations regarding each issue in turn. For each topical issue there was an opportunity for questions and answers, public comment, Task Force discussion, and a Task Force vote. Following are the topics and related Task Force recommendations:

#### **LEGISLATIVE TOPICS FOR TASK FORCE EVALUATION**

The Task Force agreed that the eight proposed code modifications recommended for approval by the Swimming Pool TAC and Electrical TAC provide enhancements to the technical requirements for grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools. In addition, the Task Force agreed that the National Electrical Code, which is adopted by reference into the Florida Building Code, has state of the art requirements for swimming pool electrical safety. In order to address the proposed code enhancements to technical requirements the Florida Building Commission will consider the TACs' recommendations and comments on public comments on August 16, 2016 concurrent with August 15-17, 2016 Commission meeting, conduct a rule development workshop on December 13, 2016, and conduct a rule adoption hearing on the final version of the Code on June 8, 2017. The effective date of the 6<sup>th</sup> Edition (2017) Florida Building Code is December 31, 2017. In addition, the Commission will consider the Task Force's package of consensus recommendations at the Commission's August 17, 2016 meeting.

Following are the Task Force's recommendations regarding specific Legislative assignments:

### **1. Grounding**

The Task Force voted unanimously that swimming pool electrical safety enhancements regarding the technical requirements for grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools were addressed in the context of the eight code modifications currently proposed for approval by the Florida Building Commission for inclusion in the 6<sup>th</sup> Edition (2017) Update to the Florida Building Code. A matrix with a summary of proposed code modifications is provided on page 4 of this Report.

### **2. Bonding**

The Task Force voted unanimously that swimming pool electrical safety enhancements regarding the technical requirements for grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools were addressed in the context of the eight code modifications currently proposed for approval by the Florida Building Commission for inclusion in the 6<sup>th</sup> Edition (2017) Update to the Florida Building Code. A matrix with a summary of proposed code modifications is provided on page 4 of this Report.

### **3. Lighting**

The Task Force voted unanimously that swimming pool electrical safety enhancements regarding the technical requirements for grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools were addressed in the context of the eight code modifications currently proposed for approval by the Florida Building Commission for inclusion in the 6<sup>th</sup> Edition (2017) Update to the Florida Building Code. A matrix with a summary of proposed code modifications is provided on page 4 of this Report.

### **4. Wiring**

The Task Force voted unanimously that swimming pool electrical safety enhancements regarding the technical requirements for grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools were addressed in the context of the eight code modifications currently proposed for approval by the Florida Building Commission for inclusion in the 6<sup>th</sup> Edition (2017) Update to the Florida Building Code. A matrix with a summary of proposed code modifications is provided on page 4 of this Report.

### **5. Other Electrical Aspects For Safety In and Around Public and Private Swimming Pools**

This topic was discussed and evaluated in the context of the issues identified by public comment below. In addition, the Task Force voted unanimously that swimming pool electrical safety enhancements regarding the technical requirements for grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools were addressed in the context of the eight code modifications currently proposed for approval by the Florida Building Commission for inclusion in the 6<sup>th</sup> Edition (2017) Update to the Florida Building Code. A matrix with a summary of proposed code modifications is provided on page 4 of this Report.

In addition, the Task Force voted unanimously to recommend that Section 515.33, F.S. (Information required to be furnished to buyers) or the appropriate statutory section(s), be amended to require that swimming pool electrical safety information as well as the information currently required pursuant to

Section 515.33, F.S. be provided to buyers at the time of the sale of any property that has a swimming pool or spa [Recommendation 4].

## **EDUCATION INITIATIVES**

The Task Force voted unanimously to support the actions taken by the Florida Building Commission regarding education initiatives including development and dissemination of the Swimming Pool Electrical Safety Fact Sheet, the Swimming Pool Electrical Safety Self Assessment questionnaire, and the Swimming Pool Electrical Safety 1-hour education course. The Task Force agreed that many issues related to swimming pool electrical safety are the result of unlicensed and unpermitted work that does not comply with the requirements of the Florida Building Code. The Task Force agreed that efforts made to provide accurate information to consumers is a critical step in ensuring that swimming pools are as safe as possible.

In addition, the Task Force voted to recommend increased funding for combating unlicensed activity and increased funding for educational outreach similar to the educational materials currently being worked on by the Commission (designed to ensure consumers are aware of the pitfalls and dangers of not hiring licensed contractors and not following code requirements) [Recommendation 3].

The educational materials developed to date are available at the following URL: [http://www.floridabuilding.org/fbc/Links\\_to\\_Code\\_Resources.html](http://www.floridabuilding.org/fbc/Links_to_Code_Resources.html)

## **TOPICAL ISSUES IDENTIFIED FOR TASK FORCE EVALUATION BY PUBLIC COMMENT**

### **1. Review and develop recommendations regarding new technologies designed to prevent electrocution in swimming pools.**

[Recommendation 5]: The Task Force voted unanimously to support the evaluation of new technologies designed and tested for use in swimming pools to prevent electrocution in swimming pools with the caveat that there needs to be standards for performance as defined in Section 104.11 of the FBC, and recommended that this topic should be evaluated in the context of the Task Force's overarching recommendation to fund a study [Recommendation 1].

### **2. Require an electrical inspection on the entire property, including testing of proper grounding and bonding, at time of sale of the house.**

[Recommendation 5]: The Task Force voted unanimously to support the evaluation of the development of criteria and/or guidelines for any additional electrical inspections at the time of property sale, and recommending that this should be evaluated in the context of the Task Force's overarching recommendation to fund a study [Recommendation 1].

### **3. Require ongoing electrical inspections of the property to meet insurance renewal requirements every X (TBD) amount of years (working with the insurance industry to hash out the specifics).**

There was no support for this concept.

### **4. Request increased funding for combating unlicensed activity and increased funding for educational outreach similar to the educational materials currently being worked on (to ensure consumers are aware of the pitfalls and dangers of not hiring licensed contractors and not following code requirements).**

[Recommendation 3]: The Task Force voted unanimously to recommend increased funding for combating unlicensed activity and increased funding for educational outreach similar to the educational materials

currently being worked on by the Commission (designed to ensure consumers are aware of the pitfalls and dangers of not hiring licensed contractors and not following code requirements).

**5. Encourage adoption of the 2017 NEC to ensure Florida has the latest/greatest electrical code requirements, skipping over the 2014 edition (the 2017 NEC has pool lift requirements that are not in the 2014 or 2011 NEC, for example).**

[Recommendation 6]: The Task Force voted, 15 – 1 in favor, that the Florida Building Code remain current with the latest edition of the NEC to ensure the latest electrical pool safety requirements are in the Florida Building Code. It was noted that new NEC provisions related to swimming pool electrical safety were few, and some suggested that adopting editions of the NEC not currently incorporated into the Florida Building Code would need to be evaluated by the Commission in the context of all of the electrical changes between the editions, and the Commission currently has authority to adopt updated editions of the NEC pursuant to Section 553.73(8)(f), F.S.

**6. Request the Legislature to fund a study to determine the extent of pool electrical problems and how best to address the 1.3 million existing residential pools in Florida (this would provide actual data on the depth of the problem and how best to address in future code editions or glitch cycles).**

[Recommendation 1]: The Task Force voted unanimously recommending to the Florida Legislature the funding of a science based study to determine the extent of swimming pool electrical problems, and how any resultant problems identified should be addressed using the best science, data, practices and technologies available.

**7. Suggest 1 hour of a Chapter 489, F.S., pool contractor’s 14 hours of CE requirements include an electrical education class (which many are already taking voluntarily thru education courses provided by FSPA, IAEI and others).**

[Recommendation 2]: The Task Force voted unanimously to recommend a mandatory requirement that 1-hour of the Chapter 489, F.S., licensed pool contractor’s 14 hours of CE requirements shall include an electrical education class regarding electrical installations related to swimming pools. This should be implemented working with the appropriate DBPR licensing boards.

## **IX. GENERAL PUBLIC COMMENT**

Members of the public were offered an opportunity to provide comment during each of the Task Force’s substantive discussion agenda items. Following is a summary of general public comment.

*Public Comments:*

There were no additional public comments offered.

## **X. TASK FORCE MEMBER COMMENT AND ISSUES**

Task Force members were invited to offer any additional general comments.

*Task Force Member Comments:*

There were no additional Task Force member comments offered.

## **XI. NEXT STEPS**

The Task Force's recommendations will be provided to the Florida Building Commission at their August 16-17, 2016 meeting, and once the Commission makes a decision on the recommendations a final report will be prepared for submittal to the Governor and Florida Legislature by the submittal deadline of November 1, 2016.

## **ADJOURNMENT**

Chairman Batts and the Facilitator thanked Task Force members and the public for their attendance and participation. Jim Richmond, FBC Executive Director, indicated that there being no further business of the Task Force, and since it had addressed all issues put before it, the Calder Sloan Swimming Pool Electrical Safety Task Force was adjourned. Having determined that there was no further business pending before the Task Force, the Task Force was adjourned at 2:57 P.M. on Monday, July 18, 2016.

**ATTACHMENT 1**  
**CALDER SLOAN SWIMMING POOL SAFETY TASK FORCE**  
**MEETING AGENDA**

**MEETING OBJECTIVES**

- To Approve Regular Procedural Topics (Agenda and Meeting Minutes)
- To Review and Provide TAC Comments on Comments Received Regarding TAC's Actions on Proposed Code Modifications for the 6<sup>th</sup> Edition (2017) Update to the Florida Building Code
- To Convene Calder Sloan Swimming Pool Electrical Safety Task Force
- To Review Task Force Charge, Scope and Operational Procedures
- To Evaluate Topical Issues Identified From Public Comment
- To Evaluate Standards for Grounding, Bonding, Lighting, Wiring, and All Electrical Aspects for Safety
- To Discuss and Evaluate Level of Acceptability of Proposed Options
- To Consider Public Comment
- To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

***MEETING AGENDA—MONDAY, JULY 18, 2016***

*All Agenda Times—including Adjournment—are Approximate and Subject to Change*

<b>8:30 AM</b>	<b>A.)</b>	<b>WELCOME AND INTRODUCTIONS</b>
	<b>B.)</b>	<b>AGENDA REVIEW AND APPROVAL (July 18, 2016)</b>
	<b>C.)</b>	<b>APPROVAL OF MEETING MINUTES (June 24, 2016 and June 27, 2016)</b>
	<b>D.)</b>	<b>TAC REVIEW AND COMMENTS ON COMMENTS RECEIVED REGARDING TAC'S ACTIONS ON PROPOSED CODE MODIFICATIONS FOR THE 6<sup>TH</sup> EDITION (2017) UPDATE TO THE FLORIDA BUILDING CODE</b>
	<b>E.)</b>	<b>CONVENE CALDER SLOAN SWIMMING POOL ELECTRICAL SAFETY TASK FORCE</b>
	<b>F.)</b>	<b>REVIEW OF TASK FORCE SCOPE, PURPOSE, AND OPERATIONAL PROCEDURES</b>
	<b>G.)</b>	<b>REVIEW OF KEY ISSUES FOR EVALUATION BY TASK FORCE</b>
	<b>H.)</b>	<b>IDENTIFICATION AND DISCUSSION OF OPTIONS FOR EVALUATION REGARDING ELECTRICAL POOL SAFETY</b>
<b>12:00 PM</b>		<b>LUNCH</b>
<b>1:00 PM</b>	<b>I.)</b>	<b>DISCUSSION AND EVALUATION OF OPTIONS IN TURN</b>
<b>3:00 PM</b>		<b>BREAK</b>
<b>3:15 PM</b>	<b>I.)</b>	<b>DISCUSSION AND EVALUATION OF OPTIONS IN TURN—CONTINUED</b>
	<b>J.)</b>	<b>GENERAL PUBLIC COMMENT</b>
	<b>K.)</b>	<b>NEXT STEPS: AGENDA ITEMS, NEEDED INFORMATION, ASSIGNMENTS, DATE AND LOCATION IF NEEDED</b>
<b>~5:00 PM</b>	<b>L.)</b>	<b>ADJOURN</b>

**ATTACHMENT 2  
TASK FORCE MEMBERSHIP**

**CALDER SLOAN SWIMMING POOL ELECTRICAL SAFETY TASK FORCE MEMBERSHIP**

**SWIMMING POOL TAC MEMBERS**

**James Batts** (Swimming Pool TAC Chair) (Task Force Chair)

Tom Allen

Jordan Clarkson

Bill Dumbaugh

*Kevin Flanagan*

John O'Connor

Mark Pabst

Gordon Shepardson

Bob Vincent

John Wahler

Corky Williams

**ELECTRICAL TAC MEMBERS**

**Kevin Flanagan** (Electrical TAC Chair)

Neal Burdick

Ken Castronovo

Shane Gerwig

Oriol Haage

Bryan Holland

David Rice

Joe Territo

Clarence Tibbs

Dwight Wilkes

Roy Van Wyk

**DBPR STAFF**

April Hammonds

FBC Legal Counsel

Mo Madani

Technical Manager

Jim Richmond

Executive Director

**FACILITATOR**

Jeff Blair

FCRC Consensus Center at Florida State University



CONSENSUS CENTER

## ATTACHMENT 3

# SWIMMING POOL TAC AND ELECTRICAL TAC CONCURRENT MEETINGS REGARDING SWIMMING POOL ELECTRICAL SAFETY SUMMARY REPORTS

## MEETING I—MONDAY, SEPTEMBER 28, 2015

### MEETING SUMMARY AND OVERVIEW

On Monday, September 28, 2015 the Swimming Pool TAC and Electrical TAC met concurrently to discuss the project scope for developing recommendations regarding pool safety issues focused on the prevention of electrocution in swimming pools. The initial scope of the project was proposed and approved as focusing on development of a proposed code amendment requiring low voltage lighting in residential pools for new construction (Phase I). The TACs agreed to focus on the low voltage lighting issue initially to ensure that any proposed code amendments regarding requiring low voltage lighting in residential swimming pools for new construction could be developed and proposed for inclusion in the 2017 Code Update Process (Florida Building Code, 6<sup>th</sup> Edition (2017) amendment cycle (1/2/16 submittal deadline). It was agreed that additional 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). Specific TAC actions included the Swimming Pool TAC and the Electrical TAC voting unanimously to approve the project scoping statement as follows: The initial Phase I scope of the project is to review and agree on 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. The Swimming Pool TAC and the Electrical TAC also voted unanimously 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. The TACs will make a recommendation regarding the Phase I project scope at the October 14, 2015 concurrent meeting of the Swimming Pool TAC and Electrical TAC.

### Background and Supporting Documents

The agenda and relevant background and supporting documents are linked to each agenda item. The Agenda URLs for the September 28, 2015 TAC meetings are as follows:

[http://www.floridabuilding.org/fbc/commission/FBC\\_1015/Swimming\\_Pool\\_TAC/Swimming\\_Pool\\_TAC\\_Agenda.htm](http://www.floridabuilding.org/fbc/commission/FBC_1015/Swimming_Pool_TAC/Swimming_Pool_TAC_Agenda.htm)

[http://www.floridabuilding.org/fbc/commission/FBC\\_1015/Electrical\\_TAC/Electrical\\_Agenda.htm](http://www.floridabuilding.org/fbc/commission/FBC_1015/Electrical_TAC/Electrical_Agenda.htm)



## 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.

## AGENDA ITEM OUTCOMES

### OPENING AND MEETING ATTENDANCE

The meeting was opened at 9:00 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, Bob Vincent, John Wabler. (8 of 11)*

*Absent Members:*

Tom Allen, Gordon Shepardson, and Corky Williams.

**Electrical TAC:** *Kevin Flanagan (chair), Neal Burdick, Ken Castronovo, Shane Gernig, Oriol Haage, David Rice, Joe Territo, Clarence Tibbs, and Dwight Wilkes (Alternate: Brian Holland). (9 of 11)*

*Absent Members:*

Leonard Devine, Jr., and Roy Van Wyk.

*\*Members participating by teleconference are italicized.*

*DBPR STAFF PRESENT*

Nick Duval, Jim Hammers, *April Hammonds*, Mo Madani, Jim Richmond, and Chip Sellers.

*\*Staff members participating by teleconference are italicized.*

### 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/>



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## **AGENDA REVIEW**

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

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

Following are the key agenda items approved for consideration:

- To Discuss Research Topic: Electrocution Prevention Study
- To Review and Approve Proposed Project Scope

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

**(See Attachment 1—Agenda)**

### *APPROVAL OF AUGUST 7, 2015 MINUTES*

The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the minutes for the August 7, 2015 meeting as posted/presented

### *APPROVAL OF JULY 31, 2015 MINUTES*

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the minutes for the July 31, 2015 meeting as posted/presented.

## **OVERVIEW**

Mo Madani, DBPR, provided the TACs with an overview of project relevant issues including proposed legislation considered, but not adopted, during the 2015 Legislative Session. Mo indicated that HB 915 contemplated creating a Swimming Pool Electrical-Safety Task Force established within the Florida Building Commission to evaluate issues designed to minimize the risks of electrocutions linked to swimming pools. Mr. Chris Sloan, during public comment, also indicated that there would also be legislation proposed on the issue for the 2016 Legislative Session. It should be noted, that the Commission has expressed the view that in general it is their preference to develop technical code amendments using the Commission’s established code amendment process, and the Commission is committed to being responsive to legislative matters impacting the Code.

Mo provided an overview of the project relevant documentation linked to the agenda including a matrix identifying the Commission’s approval of funding for an Electrocution Prevention Study as an approved research project, NFPA 70 NEC 2011 (low voltage lighting for swimming pools), Miami-Dade County’s Ordinance 1494 requiring low voltage lighting in residential swimming pools, HB 915 which if passed would have created a task force charged with evaluating matters regarding electrical aspects for safety of pools focusing on minimizing electrocution risks linked to swimming pools, FBC requirements for public pools (FBC Section 454.1.4.2.3 Underwater Lighting); and FBC requirements for residential pools (FBC Chapter 42, residential swimming pool electrical provisions).

## **PROJECT SCOPE**

Mo Madani indicated that the Commission does not have authority to consider requirements regarding the retrofitting of existing pools, unless an existing pool undergoes an alteration or repair triggering the requirement to comply with the Florida Building Code. Mo also reported that information provided by Miami-Dade County (corroborated by swimming pool contractors) indicated that the additional cost for requiring low voltage lighting would be approximately \$85 for the transformer, and that there is no real cost difference between low and high voltage fixtures. Mo explained that it makes sense to focus on low voltage lighting for residential pools in new construction so that any proposed code amendments for requiring low voltage lighting in residential swimming pools for new construction could be developed and proposed for inclusion in the 2017 Code Update Process (Florida Building Code, 6<sup>th</sup> Edition (2017) amendment cycle (1/2/16 submittal deadline).

## **PROJECT SCOPE DISCUSSION AND PUBLIC COMMENT SUMMARY**

The TAC members and the public were invited to provide their perspectives regarding project scoping. In general participants agreed that addressing the issue of low voltage lighting in residential pools for new construction would not solve all of the issues related to minimizing electrocution risks linked to swimming pools, but it is a good first step. The group identified additional topical issues they agreed should be evaluated for the project. Specifically, the TACs should discuss and evaluate the following pool safety topics related to the prevention of electrocution: bonding, grounding, retrofitting of existing pools, and the education of contractors and consumers.

Participants received information that the increased cost of the requirement would only be approximately \$85. It was discussed that the issue of cost although a consideration should not be a determinant when it comes to life safety issues. TAC members from Broward County and Miami-Dade County indicated that their respective counties had undergone a thorough evaluation and public vetting of the low voltage lighting issue and concluded that low voltage lighting should be required for residential pools, and as a result they adopted local technical amendment requiring low voltage lighting.

There was discussion and support for the rationale that it makes sense to harmonize the lighting requirements for residential pools with the low voltage lighting provisions already required for commercial swimming pools.

There were a few concerns expressed that requiring low voltage lighting in residential pools for new construction might be solving a problem that does not exist. There was a request for any documentation and safety data regarding whether low lighting in swimming pools increases safety. A couple of participants expressed that if the NEC is comfortable with the existing residential provisions then why is a low voltage requirement for residential pools needed.

The need for contractor and consumer education regarding the proper installation and maintenance of the electrical components of residential swimming pools was deemed important. This includes awareness regarding the requirement to hire licensed electrical and pool installation professionals.

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

## ***TAC ACTIONS***

**MOTION**—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, to approve the project scoping statement as follows: The initial Phase I scope of the project is to review and agree on 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 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.

**MOTION**—The Electrical Pool TAC voted unanimously, 9 - 0 in favor, to approve the project scoping statement as follows: The initial Phase I scope of the project is to review and agree on 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 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.

#### *EVALUATION OF NEED TO REQUIRE LOW VOLTAGE LIGHTING FOR PRIVATE SWIMMING POOLS*

Members of the TACs and the public were provided with an additional opportunity to comment on the Phase I aspects of the project (evaluation of a possible requirement for low voltage lighting in residential pools for new construction). The discussion and key points are captured in the previous section of this Report (Project Scope Discussion and Public Comment Summary). It was noted that the specific technical requirements for low voltage lighting would be discussed at the October 14, 2015 meeting.

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

#### *TAC ACTIONS*

**MOTION**—The Electrical TAC voted, 6 – 3\* in favor, to recommend in concept developing a code amendment to require low voltage lighting in residential swimming pools for new construction.

*\* The motion failed as a result of not achieving the required threshold of 75% or more in favor for approval. The motion achieved a 67% in favor vote.*

**MOTION**—The Electrical TAC voted unanimously, 9 - 0 in favor, to reconsider the previous action.

**MOTION**—The Electrical TAC voted unanimously, 9 - 0 in favor, 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.

**MOTION**—The Swimming Pool TAC voted unanimously, 8 - 0 in favor, 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.

## **NEXT STEPS**

Following are the next steps for the Project:

- TAC members and participants should send project relevant documentation including any safety studies and data regarding low voltage lighting to Mo Madani at: [Mo.Madani@myfloridalicense.com](mailto:Mo.Madani@myfloridalicense.com) by close of business on Friday, October 2, 2015 to ensure it can be provided to TAC members as soon as possible, and linked to the October 14, 2015 agenda in time to meet noticing requirements.
- TAC members should be prepared to discuss the specific technical requirements for any proposed code amendment regarding low voltage lighting for residential pools in new construction.
- TAC members should be prepared to provide a recommendation to the Commission on the Phase I scope of the project.
- TAC members should be prepared to discuss and evaluate the Phase II topical issues.

## **ADJOURN**

After a determination that a quorum was still present the Swimming Pool TAC voted unanimously, 8 – 0 in favor, to adjourn the meeting at 10:52 AM on Monday, September 28, 2015.

After a determination that a quorum was still present the Electrical Pool TAC voted unanimously, 9 – 0 in favor, to adjourn the meeting at 10:52 AM on Monday, September 28, 2015.

## MEETING II—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 Electrocutation 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/>



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## **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/Swimming_Pool_TAC/Swimming_Pool_TAC_Agenda_101415.htm)

[http://www.floridabuilding.org/fbc/commission/FBC\\_1015/Electrical\\_TAC/Electrical\\_Agenda\\_TAC\\_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 ( $\geq 75\%$  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.

## MEETING III—TUESDAY, MAY 24, 2016

### MEETING SUMMARY AND OVERVIEW

On Tuesday, May 24, 2016 the Electrical TAC and Swimming Pool TAC met concurrently via a teleconference meeting to develop recommendations to the Florida Building Commission regarding how to proceed in order to finalize the study regarding minimizing electrocutions linked to swimming pools as directed by Section 30 of HB 535, the Calder Sloan Swimming Pool Electrical Safety Task Force. The TACs discussed what the key issues were regarding proceeding, and following public comment both TACs voted unanimously to recommend the Commission convene the Calder Sloan Swimming Pool Electrical Safety Task Force after July 1, 2017 and to charge the Task Force with reviewing the issues identified from public comment as follows:

1. Review and develop recommendations regarding new technologies designed to prevent electrocution in swimming pools, including devices available to detect electrical power in swimming pools.
2. Require an electrical inspection on the entire property, including testing of proper grounding and bonding, at time of sale of the house.
3. Require ongoing electrical inspections of the property to meet insurance renewal requirements every X amount of years (working with the insurance industry to hash out the specifics).
4. Request increased funding for combating unlicensed activity and increased funding for educational outreach similar to the educational materials currently being worked on (to ensure consumers are aware of the pitfalls and dangers of not hiring licensed contractors and not following code requirements).
5. Encourage adoption of the 2017 NEC to ensure Florida has the latest/greatest electrical code requirements, skipping over the 2014 edition (the 2017 NEC has pool lift requirements that are not in the 2014 or 2011 NEC, for example).
6. Request the Legislature to fund a study to determine the extent of pool electrical problems and how best to address the 1.3 million existing residential pools in Florida (this would provide actual data on the depth of the problem and how best to address in future code editions or glitch cycles).
7. Suggest 1 hour of a Chapter 489, F.S., pool contractor's 14 hours of CE requirements include an electrical education class (which many are already taking voluntarily thru education courses provided by FSPA, IAEE and others).

### 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 was 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 was 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 concluded their evaluation of low voltage lighting they would then evaluate additional project relevant topics in Phase II of the project: specifically bonding, grounding, retrofitting of existing pools, and education. The TACs met for the second time on October 14, 2015 and developed a consensus package of recommendations for both phases of the project (Phase I and Phase II). At their October 15, 2015 meeting the Commission voted unanimously to adopt the Swimming Pool TAC's and Electrical TAC's swimming pool safety consensus package of recommendations focused on the prevention of electrocution in swimming pools. The Code amendments were proposed for inclusion in the *Florida Building Code, 6<sup>th</sup> Edition (2017)* and currently under evaluation by the relevant TACs.

The 2016 Legislature through passage of HB 535 established within the Florida Building Commission the Calder Sloan Swimming Pool Electrical-Safety Task Force. The purpose of the task force is to study standards for grounding, bonding, lighting, wiring, and all electrical aspects for safety in and around public and private swimming pools, especially with regard to minimizing risks of electrocutions linked to swimming pools. The task force shall submit a report of its findings, including recommended revisions to state law, if any, to the Governor, the President of the Senate, and the Speaker of the House of Representatives by November 1, 2016.

Subsequent to the first two phases of the project, in a concurrent meeting conducted during the TACs' review of proposed Code amendments for the 2017 Code Update Process the Swimming Pool and the Electrical TACs discussed the Calder Sloan Swimming Pool Electrical-Safety Task Force that was established within the Florida Building Commission by the 2016 Florida Legislature and decided that the two TACs should meet concurrently to further evaluate the issue. The TACs expressed the desire to consider any potential Code modifications based on the best available science and data, and will make recommendations to the Commission accordingly.

As the next step in the process the Commission convened a concurrent meeting of the Swimming Pool TAC and Electrical TAC on May 24, 2016 to discuss recommendations to the Commission regarding how best to proceed with the evaluation of pool electrical safety. In response, the TACs' voted unanimously to recommend the Commission convene the Calder Sloan Swimming Pool Electrical Safety Task Force after July 1, 2017, and to charge the Task Force with reviewing the issues identified during public comment provided during the May 24, 2016 teleconference meeting.

## AGENDA ITEM OUTCOMES

### OPENING AND TELECONFERENCE MEETING PARTICIPATION

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

**Electrical TAC:** Kevin Flanagan (chair), Neal Burdick, Ken Castronovo, Shane Gerwig, Oriol Haage, Bryan Holland, David Rice, Clarence Tibbs, and Dwight Wilkes. (9 of 11)

*Absent Members:*

Joe Territo, and Roy Van Wyk.

**Swimming Pool TAC:** James Batts (chair), Jordan Clarkson, Bill Dumbaugh, Kevin Flanagan, John O'Conner, Mark Pabst, Gordon Shepardson, Bob Vincent, and Corky Williams. (9 of 10)

*Absent Members:*

John Wahler.

*DBPR Staff Present*

Joe Bigelow, Nick Duval, Jim Hammers, April Hammonds, Mo Madani, Jim Richmond, Chip Sellers  
Marlita Peters.

### 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 May 24, 2016 TAC meetings are as follows:

[http://www.floridabuilding.org/fbc/commission/FBC\\_0616/electrical\\_tac/electrical\\_agenda\\_052416.htm](http://www.floridabuilding.org/fbc/commission/FBC_0616/electrical_tac/electrical_agenda_052416.htm)

[http://www.floridabuilding.org/fbc/commission/FBC\\_0616/Swimming\\_pool/Swimming\\_Pool\\_Agenda\\_052416.htm](http://www.floridabuilding.org/fbc/commission/FBC_0616/Swimming_pool/Swimming_Pool_Agenda_052416.htm)

## **AGENDA REVIEW**

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the agenda for the May 24, 2016 meeting as posted/presented.

The Swimming Pool TAC voted unanimously, 9 - 0 in favor, to approve the agenda for the May 24, 2016 meeting as posted/presented.

Following are the key agenda items approved for consideration:

- To continue discussion and make recommendations to the Commission regarding whether further discussion is necessary to finalize the study regarding minimizing electrocutions linked to swimming pools as directed by [HB 535](#).

## **APPROVAL OF APRIL 29, 2016 MEETING MINUTES**

The Electrical TAC voted unanimously, 9 - 0 in favor, to approve the Meeting Minutes for the April 29, 2016 meeting as posted/presented.

## **APPROVAL OF APRIL 29, 2016 MEETING MINUTES**

The Swimming Pool TAC voted unanimously, 9 - 0 in favor, to approve the Meeting Minutes for the April 29, 2016 meeting as posted/presented.

## **TAC ACTIONS**

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

**MOTION**—The Electrical TAC voted unanimously, 9 - 0 in favor, to recommend the Commission convene the Calder Sloan Swimming Pool Electrical Safety Task Force after July 1, 2017, and to charge the Task Force with reviewing the issues identified from the public comment provided during the May 24, 2016 teleconference meeting.

**MOTION**—The Swimming Pool TAC voted unanimously, 9 - 0 in favor, to recommend the Commission convene the Calder Sloan Swimming Pool Electrical Safety Task Force after July 1, 2017, and to charge the Task Force with reviewing the issues identified from the public comment provided during the May 24, 2016 teleconference meeting.

## **SUMMARY OF ISSUES FOR EVALUATION BY THE TASK FORCE**

1. Review and develop recommendations regarding new technologies designed to prevent electrocution in swimming pools, including devices available to detect electrical power in swimming pools.
2. Require an electrical inspection on the entire property, including testing of proper grounding and bonding, at time of sale of the house.
3. Require ongoing electrical inspections of the property to meet insurance renewal requirements every X amount of years (working with the insurance industry to hash out the specifics).
4. Request increased funding for combating unlicensed activity and increased funding for educational outreach similar to the educational materials currently being worked on (to ensure consumers are

aware of the pitfalls and dangers of not hiring licensed contractors and not following code requirements).

5. Encourage adoption of the 2017 NEC to ensure Florida has the latest/greatest electrical code requirements, skipping over the 2014 edition (the 2017 NEC has pool lift requirements that are not in the 2014 or 2011 NEC, for example).
6. Request the Legislature to fund a study to determine the extent of pool electrical problems and how best to address the 1.3 million existing residential pools in Florida (this would provide actual data on the depth of the problem and how best to address in future code editions or glitch cycles).
7. Suggest 1 hour of a Chapter 489, F.S., pool contractor's 14 hours of CE requirements include an electrical education class (which many are already taking voluntarily thru education courses provided by FSPA, IAEI and others).

### **NEXT STEPS**

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

- The Commission will evaluate the 'TACs' (Electrical TAC and Swimming Pool TAC) consensus package of recommendations at the June 8, meeting.

### **ADJOURNMENT**

After a determination that a quorum was still present the Electrical TAC voted unanimously, 9 – 0 in favor, to adjourn the meeting at 10:55 AM on Tuesday, May 24, 2016.

After a determination that a quorum was still present the Swimming Pool TAC voted unanimously, 9 – 0 in favor, to adjourn the meeting at 10:55 AM on Tuesday, May 24, 2016.

## ATTACHMENT 4

### SWIMMING POOL ELECTRICAL SAFETY PROJECT STATUS UPDATE

**Note:** Proposed code modifications and the fact sheet/training educational module as detailed in this document are for information and not for discussion.

**Recommendations as approved by The Commission October 15, 2015**

#### **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).

**Code amendments/Progress to date:**

**6<sup>th</sup> Edition (2017) FBC, Buildings**

#### **(E/SW 6452 AS)**

**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.~~

#### **(E/SW 6531 – A1)**

**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.

**2nd comment period – July 18, 2016, both TACs support A1 as an alternative to the above.**

**454.1.4.1 Electrical equipment and wiring.** Electrical equipment wiring and installation, including the bonding and grounding of pool components shall ~~conform~~ comply with Chapter 27 of the Florida Building Code, Building. Outlets supplying pool pump motors connected to single-phase 120-volt through 240-volt branch circuits, whether by receptacle or by direct connection, and outlets supplying other electrical equipment and underwater luminaires operating at voltages greater than the Low Voltage Contact Limit, 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 equipment wiring and installation, including the bonding and grounding of pool components ~~equipment~~ shall comply with Chapter 27 of the Florida Building Code, Building. Outlets supplying pool pump motors connected to single-phase 120-volt through 240-volt branch circuits, whether by receptacle or by direct connection, and outlets supplying other electrical equipment and underwater luminaires operating at voltages greater than the Low Voltage Contact Limit, 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.

**(SW6531 – A1)**

**(E/SW 6530 – A1)**

**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.

**2nd comment period – July 18, 2016, both TACs support A1 as an alternative to the above.**

**R4501.16 Electrical.** Electrical equipment wiring and installation, including the bonding and grounding of pool components ~~equipment~~ shall comply with Chapter 27 of the *Florida Building Code*, Building. Outlets supplying pool pump motors connected to single-phase 120-volt through 240-volt branch circuits, whether by receptacle or by direct connection, and outlets supplying other electrical equipment and underwater luminaires operating at voltages greater than the Low Voltage Contact Limit, 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.

(SW6530-A1)

**Recommendations as approved by The Commission October 15, 2015**

**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.

Swimming Pool TAC 5-3 (63%)

**Code amendments/Progress to date:**

**6<sup>th</sup> Edition (2017) FBC, Buildings**

(CA/E/SW 6498-A3)

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.**

**2nd comment period – July 18, 2016, both TACs support A3 as an alternative to the above.**

*Building upon the revision made by the TAC in April, add the underlined wording as follows:*

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 on said alterations or repairs.

(CA6498-A3)

(E/SW 6496 – A1)

**Section 454.1.10.4 Swimming Pool - Electrical**

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

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

1. 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.

**2nd comment period – July 18, 2016, both TACs support A1 as an alternative to the above.**

**Section 454.1.10.4 Swimming Pool - Electrical**

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

Where alteration work includes replacement of pool pump motors connected to 120-volt and 240-volt single phase branch circuits, a ground-fault circuit-interrupter shall be provided, if one is not already in place.

1. Where alteration work includes replacement of 120-volt pool lights underwater luminaires, a ground-fault circuit-interrupter shall be provided, if one is not already in place, for all underwater luminaires operating at voltages greater than the Low Voltage Contact Limit.

**(SW6496-A1)**

**6<sup>th</sup> Edition (2017) FBC, Existing Building**

**(E/SW 6493 – A1)**

Section 413 Add to read as follows:

Section 413 Swimming Pool - Electrical

413.1 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.

**2nd comment period – July 18, 2016, both TACs support A1 as an alternative to the above.**

Section 413 Add to read as follows:

Section 413 Swimming Pool - Electrical

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

1. Where alteration work includes replacement of pool pump motors connected to 120-volt and 240-volt single phase branch circuits, 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 underwater luminaires, a ground-fault circuit-interrupter shall be provided, if one is not already in place, for all underwater luminaires operating at voltages greater than the Low Voltage Contact Limit.

**(SW6493-A1)**

**(E/SW 6494 –A1)**

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.

**2nd comment period – July 18, 2016, both TACs support A1 as an alternative to the above.**

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 connected to 120-volt and 240-volt single phase branch circuits, 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~~ *underwater luminaires*, a ground-fault circuit-interrupter shall be provided, if one is not already in place, for all *underwater luminaires operating at voltages greater than the Low Voltage Contact Limit.*

**(SW6494-A1)**

**(E/SW 6529 – A1)**

**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 mm<sup>2</sup> (9 in<sup>2</sup>) 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*.

**2nd comment period – July 18, 2016, both TACs support A1 as an alternative to the above.**

**302.6 Swimming Pools.** The provisions of Sections 302.6.1 and 302.6.2 apply to all alterations, repairs, additions, and relocation of equipment at existing swimming pools regardless of compliance method.

**302.6.1 Ground-Fault Circuit-Interrupter Protection for Personnel.** Outlets supplying repaired, replaced, altered, or relocated pool pump motors connected to single-phase, 120-volt through 240-volt branch circuits, whether by receptacle or by direct connection, and outlets supplying all other repaired, replaced, altered, or relocated electrical equipment and underwater luminaires operating at voltages greater than the low voltage contact limit, connected to single-phase, 120-volt through 240-volt branch circuits, rated 15- and 20-amperes, whether by receptacle or by direct connection, shall be provided with ground-fault circuit interrupter protection for personnel.

**302.6.2 Equipotential Bonding.** 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 mm<sup>2</sup> (9 in.<sup>2</sup>) 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*.

**(E 6529 - A1)**

## **Recommendations as approved by The Commission October 15, 2015**

### **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.

### **Progress to date:**

#### **Swimming Pool Electrical Safety**

#### **Factsheet and Educational Training Module Content Outline**

As approved by the TACs – June 27, 2016

[http://www.floridabuilding.org/fbc/Links\\_to\\_Code\\_Resources.html](http://www.floridabuilding.org/fbc/Links_to_Code_Resources.html)

**ATTACHMENT 5**  
**PUBLIC PARTICIPATION**

**VISITOR & SPEAKER SIGN IN SHEET**

**FLORIDA BUILDING COMMISSION**  
**Electrical and Swimming Pool TAC Meeting**

UF Hilton, Gainesville, FL

July 18, 2016

Time 8:30 am – Until Completion

Please Print Name and Affiliation	SIGNATURE	Email Address Phone Number(s)	
Diya Mungoo - Diya's Pool Serv		diya@diyaspool.com	
Michael Weisbauer Aquatic Design and Eng.		mike@adesign.com	
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<b>STAFF</b>			
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Chris Howell	Jeff Blair, Facilitator		
April Hammonds	Norman Bellamy		
Jim Hammers	Marilia Peters		