To: Members of the Committee to Address Uniform Procedures for Installation of Bi-Directional Amplifiers (BDA)

D. Rice, P.E.  
B. Bowers  
M. Bray  
K. Brown  
J. De Zayas  
T. DiBernardo  
R. Dinello  
J. Franklin  
K. Grams  
B. Higdon  
W. Keys  
H. Melamed  
J. Preston  
M. Sheehan  
R. Taylor  
A. Zackria

From: Bryan Parks, Chief Fire Code Compliance Officer  
Ken Castronovo, Chief Electrical Code Compliance Officer

Date: February 26, 2019

Subj: BDA Committee to Discuss Agenda Items

AGENDA

The Chairman of the BDA Committee, Mr. Dave Rice P.E., has called for a meeting of the BDA Committee on February 26, 2019 at 1:30pm at the Plantation Fire Station, 550 NW 65th Avenue, Plantation, FL 33317. The latest issues concerning Bi-Directional Amplifiers, Section 118 of the Broward County Amendments to the Florida Building Code, will be discussed.

AGENDA

Chairman Welcoming Remarks

New Member(s): Mr. Mickey Bray, Chief Electrical Inspector, City of Pompano Beach  
Mr. Robert Dinello, Electrical Plans Examiner, City of Fort Lauderdale

Roll Call

Acceptance of December 2018 Meeting Minutes

Regular Meeting

Item 1: Review Formal Interpretation #20 concerning UL Standard 2524 for Bi-Directional Amplifier Systems ............................................................ (Page 1)  
A. Memo to all interested BDA parties concerning UL 2524  
(Effective Date: April 19, 2019) ......................................................... (Page 3)

Item 2: Discussion on the Electrical Contractors Licensing Board specialty licensing option for the Bi-Directional Amplifier profession update ........................................... (Page 5)

Item 3: Discussion on enforcing the code in effect ................................. (Page 7)

Item 4: Bi-Directional Amplifier plan review checklist discussion .......... (Page 9)

Discussion

Schedule Next Meeting

Adjournment
Chair David Rice, P.E. introduced the Broward County Board of Rules and Appeals staff as points of contact for assistance.

Call to order:

Chair David Rice, P.E. called a published meeting of the Broward County Board of Rules and Appeals Committee to Address Uniform Procedures for Installation of Bi-Directional Amplifiers to order at 1:32pm.

The roll was called, and the following members were present:

Present:

- Bruce Bowers
- Kenneth “Sean” Brown
- Thomas DiBernardo
- Johnathan Franklin
- Kevin Grams
- William “Bill” Keys, CFPE
- Howard Melamed
- John Preston
- David Rice, P.E.
- Mike Sheehan
- Robert Taylor

Staff: Bryan Parks, Chief Fire Code Compliance Officer
      Kenneth Castronovo, Chief Electrical Code Compliance Officer

A MOTION WAS MADE BY MR. MELAMED AND SECONDED BY MR. KEYS TO APPROVE THE SEPTEMBER 26, 2018 COMMITTEE TO ADDRESS UNIFORM PROCEDURES FOR INSTALLATION OF BI-DIRECTIONAL AMPLIFIERS MEETING MINUTES. THE MOTION PASSED BY UNANIMOUS VOTE.

Chair David Rice, P.E. introduced Mr. Robert Taylor, Fire Marshal, Town of Davie Fire Department, as the newest member of the Committee to Address Uniform Procedures for Installation of Bi-Directional Amplifiers.
Item 1: Review the new UL Standard 2524 for Bi-Directional Amplifiers and the time frame to require compliance with the standard.

A. Memo to all interested BDA parties concerning UL 2524
(Effective Date: October 19, 2018)

Chair Rice informed the audience that in the past, the UL Standard 2524 was either listed by a National Recognized Testing Laboratory (NRTL) or subjected to third-party testing, a very expensive process. As a result, the Broward County Board of Rules and Appeals approved Formal Interpretation #20: Two-Way Radio Communication Enhanced Public Safety Signal Booster Systems, to allow the engineer to buy their own Bi-Directional Amplifiers (BDA) until UL publishes a list of requirements for BDAs. Since UL has created a requirement, the BDA Committee is updating its standards as well.

Mr. Kenneth Castronovo, Broward County Board of Rules and Appeals, stated that UL Standard 2524 has been effective since October 19, 2018. Currently there are multiple manufacturers provide listings available based on UL 1224.

The Broward County Board of Rules and Appeals FBC 6th Edition (2017) – Formal Interpretation #20 (Two-Way Radio Communication Enhanced Public Safety Signal Booster Systems), states that six months after a UL Standard is issued, the Broward County Board of Rules and Appeals will no longer accept an engineer’s signature on plans in attempts to approve equipment and features on a BDA system. Based on Formal Interpretation #20, the BDA systems that follow anything other than UL 2524, will not be acceptable after April 19, 2019. In preparation for this change, the Broward County Board of Rules and Appeals will notify all municipalities in Broward County, informing them that formal Interpretation #20 is no longer valid.

Mr. Castronovo added that even though it is currently a free market, all systems will be regulated by NFPA 790 and NFPA 791, which requires all third-party field evaluations.

Mr. Jonathan Franklin, Signal Communications, LLC, mentioned that manufacturers are working to adopt UL Standard equipment. He believes that seeking an alternate option in lieu of a third-party field evaluation will not be viable because it has the potential to alter costs and logistics negatively.

Mr. Scott Douglas, City of Miramar, asked the committee members if anyone has completed research on the cost of getting a product listed by an Nationally Recognized Testing Laboratory (NRTL). Because the proposed April 2019 deadline is so soon, all of the costs associated with the process should be made known to industry professionals.

Mr. Ray Reilly, Honeywell, agreed that the process of gaining a device listing has the potential to be expensive. He added that if anything is found to be out of compliance, there are additional costs attributed to the time that it will take to gain compliance.

Chair Rice asked the public if they have notified the manufactures about that the BDA systems that follow anything other than UL 2524 and will not be acceptable after April 19, 2019.
Mr. Thomas Sullivan, Mobile Communication, said that if the Honeywell BDA is the only acceptable device to use, it only offers a 24dB BDA. He added that that type of device would only be suitable for smaller buildings, rather than large ones. Mr. Sullivan stated that it is necessary to have BDAs available in a range of power levels and capabilities to be able to cater to different building sizes.

Mr. Reilly noted that Honeywell devices have the capability to accommodate large spaces. He mentioned a 2-watt BDA that is currently being used in a large-scale project in California. Mr. Howard Melamed, Cell Antenna Corporation, interjected the fact the UL listing is not required in the State of California for BDA devices, making it easier to find BDAs to accommodate many building sizes, compared to Broward County.

Mr. Melamed mentioned the current monopoly in BDA devices. He suggested to delay the deadline six months after the original deadline to give the committee time to find at least three companies that are UL listed, which will result in “healthy competition,” rather than just having only one company, Honeywell, to choose from.

Mr. Melamed asked if someone paid for a third-party inspection of an existing BDA system, combined with the BBU, the completed inspection should be utilized as a certificate that can be carried on to other projects? He added that if that is not the case, the BDA Committee should request for a delay in the implementation of UL Standard 2524 until there is fair competition available in the market. Chair Rice said that this will affect the project through permitting, not installation.

Mr. Bryan Parks, Broward County Board of Rules and Appeals, reminded the room to not be fixated on getting their products listed by UL because there is no state code that requires it. He stated that a listing by any Nationally Recognized Testing Laboratory (NRTL) is credible.

Chair Rice asked the industry professionals how many competitors produce BDA equipment, who the competitors are and how they can be contacted. Mr. Melamed offered to provide a list of the manufacturers that he has access to and emphasized to identify at least three manufacturers to create competition. Mr. Reilly added that Honeywell sells under multiple brands, resulting in multiple brands of the same product.

Chair Rice requested that everyone in the room send an email to Mr. Castronovo listing the contact information of the manufacturers that they have relationships with in hopes of finding out as many methods as possible for getting BDAs listed by a NRTL.

Mr. Douglas asked individuals employed by a fire department if they are finding problems with the BDA Systems being installed in their city. Because life safety is a priority, a critical component of delaying this decision would be based on the BDA systems inspection reports.

Mr. John Preston, Oakland Park Fire Rescue, said that in his experience he has not seen installation issues. Because none of the previously installed and approved BDA systems are UL listed, he asked how they will be regulated after the future systems become listed. Chair Rice suggested treating the situation like any other code, by utilizing the state code protocol.

Mr. Melamed asked if the law becomes effective in April 2019, but some current jobs aren’t
completed until months later, which code would the contractors be responsible for adhering to? He said that this has been a big problem in an ever-changing code and one of the challenges is making sure the contractor can keep up with the code and will allow them to be able to afford to pay the owner.

Mr. Castronovo clarified that if the plans have been submitted before the date of the code change, they won’t be transferred to the new standard. Mr. Parks added that according to the fire code, stating that according to 2015 NFPA 1, 1.4, a fire marshal has the authority to accept listed or non-listed BDA system.

Chair Rice clarified that the electric code does not have the same liberties that the fire code does. Anything that falls under NFPA 70 is related electrical discipline and prevents anyone from accepting non-listed products. NFPA 72 pertains to the fire discipline. He also suggested scheduling the next BDA Committee Meeting for mid-January 2019 to follow up with Mr. Castronovo about the manufacturers that he communicated with about listing BDA systems, which will allow the committee to decide if a formal request should be made to the Broward County Board of Rules and Appeals.

Mr. Michael Millard, Cell Antenna Corporation, asked what is the purpose of requiring field evaluation if they are non-transferrable? Chair Rice replied that if anyone aspires to have a product listed, an acceptable UL listing practice is to have the product evaluated to the UL standards applicable to the specific product. The evaluation process is viable for that individual installation.

Mr. John Dignan, RF Group, mentioned that most of the BDA manufacturers produce BDAs, but they don’t produce their own battery back-ups. He asked for the proper protocol for scenarios such as these where you possess only the UL-listed BDA, but all of the other components are not listed.

Chair Rice acknowledged that there are many components of the BDA system that are not listed, but they may have to be handled in the same manner as they are handled now. The current practice is to have an engineer identify what they deem as acceptable and allow those specific products to be used.

Mr. Castronovo surveyed the room about if they had their products evaluated and asked the cost of the service.

**A MOTION WAS MADE BY MR. DIBERNARDO AND SECONDED BY MR. FRANKLIN TO APPROVE A SIX-MONTH DELAY TO POSTPONE THE APPROVAL OF UL STANDARD 2524 UNTIL OCTOBER 15, 2019. THE MOTION PASSED BY UNANIMOUS VOTE.**

**Item 2: Electrical Contractors Licensing Board supplemental licensing option for the Bi-Directional Amplifier profession update.**

Chair Rice explained that these decisions are not made by the Board of Rules and Appeals. The Electrical Contractors Licensing Board has authority over the licensing regulations.
Mr. Castronovo clarified that the Electrical Contractors Licensing Board (ECLB) is moving forward with creating specialty licenses for installing Bi-Directional Amplifiers. This license will dictate who can pull a permit or create a contract for a BDA system project. The ECLB decided to that there was a need for this license after realizing that the installation of BDAs was much more technically advanced than what most electrical and/or fire contractors are currently required to know.

The ECLB voted that the following professionals could be eligible for BDA Systems licensing: BDA contractors, electrical contractors, fire alarm contractors and registered fire alarm contractors. They approved a $27,000.00 quote from the Bureau of Educational Testing to draft a licensing exam.

Mr. Castronovo is working with the ECLB to host educational seminars throughout South Florida in 2019, after professionals in the area displayed vested interest in the topic. Mr. Castronovo asked for engineers licensed by the State of Florida who work with Bi-Directional Amplifiers to submit their contact information to assist the ECLB develop the licensing exams.

Mr. Castronovo warned the room about installing BDAs illegally and incurring fines. An audience member said that he has a qualifier for installing BDA systems. He added that he hired a Master Electrician and completed a financial statement to complete the process. Mr. Castronovo suggested that other professionals follow suit to avoid putting their business in jeopardy. Chair Rice urged professionals to be aware of the legal process of signing contracts and getting the work done.

Mr. Dignan asked if a licensed engineer has the ability to perform numerous practices legally, is there value in having a BDA license. Mr. Castronovo noted that the ECLB found value in possessing a BDA Systems specialty.

Mr. Brian Feero, Fire Controls Inc., asked for clarification: If the unlicensed BDA installers will be allowed to continue to sell their equipment, who will be authorized to certify the BDA system installation?

Chair Rice encouraged all interested parties to attend the next scheduled ECLB meeting because the organization is the governing agency for contracting.

Mr. Gary Gray, City of Fort Lauderdale, recommended that any system installed should have a service-level agreement with the company responsible for the installation.

**NO MOTION.**

**Item 3: Bi-Directional Amplifier plan review checklist update to include the elevator code.**

Mr. Castronovo referred to Item 3, page 6 of the document titled “*Bi-Directional Amplifier Plan Review Guidelines for Electrical. Two-Way Radio Communications Enhancement System. (Based on NFPA 72, 2013. NFPA 70, 2014. Section 118, FBC Broward County, November 28, 2018.)*,” which goes into detail about installing antennas in elevator shafts. The elevator code, ASME A-
17.1, states that only machinery and equipment used directly in connection with the elevator, shall be permitted in elevator hoistways, machine rooms and control spaces/rooms. He added that the State of Florida has its own adopted code in addition to NFPA 72.

Chair Rice asked the room to read through Item 3 and submit their comments and suggestions to Mr. Castronovo before document is finalized. He also noted that the comments should be submitted to Ken as soon as possible so that they will be included in the next draft, which will allow them to be discussed at the next BDA Committee meeting in 2019.

Chair Rice mentioned that the BDA Committee faces unique challenges from other committees because the codes that pertain to BDA systems are no less than 5 years behind the available technology. Since the State of Florida codes are not up-to-date, fire departments are working to be able to adopt more recent codes in attempts to become more current and technologically advanced.

Mr. Thomas DiBernardo, Fire Chiefs Association of Broward County, informed the audience that the 2019 1221 edition of the 2019 Code is available. It will provide smoother installation processes when working with fire marshals to build BDA systems to the newest code.

Mr. Edmond Langdo, Advanced BDA, inquired about the heat mapping subject that was on the September 26, 2018 BDA Committee Meeting Agenda. Mr. Parks informed him that the modifications to the code that were agreed upon are being submitted for Broward County Board of Rules and Appeals' board approval as an item on the Board Meeting Agenda for the upcoming meeting being held on January 10, 2019.

NO MOTION.

A MOTION WAS MADE BY MR. MELAMED AND SECONDED BY MR. FRANKLIN TO ADJOURN THE MEETING. THE MOTION PASSED BY UNANIMOUS VOTE.

Adjournment
Having no further business to go before the Committee, the meeting adjourned at 2:49pm.
Item 1:
Review Formal Interpretation #20 concerning UL Standard 2524 for Bi-Directional Amplifier Systems
DATE: October 12, 2017

TO: All Building Officials

FROM: James DiPietro

Administrative Director


At its regular meeting of October 12, 2017, the Board of Rules and Appeals approved an interpretation of Chapter I, Section 118, titled Two-Way Radio Communication Enhanced Public Safety Signal Booster Systems, as follows:

Plans shall be signed and sealed by a licensed professional engineer. The engineer of record shall be responsible for the system. The engineer of record shall specify the brand and the model number of the bi-directional amplifier (BDA), the antenna and the component parts.

It is recognized that presently there is no listing approval for BDA systems by a nationally recognized testing laboratory.

This Formal Interpretation shall remain in effect until six (6) months after the UL sets this listing approval.

Adopted Date: October 12, 2017
Effective Date: October 13, 2017
Re-Adopted: January 1, 2018

**PLEASE POST AT YOUR PERMIT COUNTER*****
Item 1a:
Memo to all interested BDA parties concerning UL 2524 (Effective Date: April 19, 2019)
Subject: Formal Interpretation #20 Expiring April 19, 2019

Date: January 31, 2019

To: All Bi-Directional Amplifier Interested Parties

From: Kenneth Castronovo, Chief Electrical Code Compliance Officer

Broward County Formal Interpretation #20 (FI #20) will expire April 19, 2019. FI #20 allows the Engineer of Record to certify BDA Systems equipment for AHJ approvals up to six months after a standard is issued by a Nationally Recognized Testing Laboratory. UL Standard 2524 was issued on October 19, 2018. The extension deadline for FI #20 is rapidly approaching. All specifications submitted for BDA systems for permitting after the above date will be required to be UL 2524 compliant. Any BDA System can still be certified by a third-party field evaluation company using NFPA 790 and 791. Third-Party Field Evaluation companies shall be accepted by the Authority Having Jurisdiction to perform Field Evaluations.

Sincerely,

Kenneth Castronovo
Item 2:
Discussion on the Electrical Contractors Licensing Board specialty licensing option for the Bi-Directional Amplifier profession update
Subject: Electrical Contractors Licensing Board General Meeting

Date: February 26, 2019

To: Broward County Board of Rules and Appeals Bi-Directional Amplifier Committee

From: Kenneth Castronovo, Chief Electrical Code Compliance Officer

The general meeting of the Electrical Contractors Licensing Board was held on January 25, 2019 in Fernandina Beach, Florida. A continuation of discussion concerning establishing a specialty license for the Bi-Directional Amplifier industry. It was agreed that the title of the specialty would be “Two-Way Radio Communications Enhancement Systems”. Other discussions were on how many licenses would be issued for this specialty. There were no other issues brought up at this time and the Board voted in favor to name the specialty “Two-way radio Communications Enhancement Systems”.

The next Board meeting will be on March 20-22, 2019 in Howey in the Hills, FL.

Kenneth Castronovo
**Item 3:**
Discussion on enforcing the code in effect
TO: BDA Committee

FROM: Bryan Parks, Chief Fire Code Official

DATE: February 7, 2019

SUBJECT: Standards and Codes as it relates to BDA.

Florida Statute 633.202 (18)

(18) The authority having jurisdiction shall determine the minimum radio signal strength for fire department communications in all new high-rise and existing high-rise buildings. Existing buildings are not required to comply with minimum radio strength for fire department communications and two-way radio system enhancement communications as required by the Florida Fire Prevention Code until January 1, 2022. However, by December 31, 2019, an existing building that is not in compliance with the requirements for minimum radio strength for fire department communications must apply for an appropriate permit for the required installation with the local government agency having jurisdiction and must demonstrate that the building will become compliant by January 1, 2022. Existing apartment buildings are not required to comply until January 1, 2025. However, existing apartment buildings are required to apply for the appropriate permit for the required communications installation by December 31, 2022.

NFPA 1, 2015


11.10.1 In all new and existing buildings, minimum radio signal strength for fire department communications shall be maintained at a level determined by the AHJ.

11.10.2 Where required by the AHJ, two-way radio communication enhancement systems shall comply with NFPA 72.

11.10.3 Where a two-way radio communication enhancement system is required and such system, components, or equipment has a negative impact on the normal operations of the facility at which it is installed, the AHJ shall have the authority to accept an automatically activated responder system.

Note: If the AHJ requires a system be installed the following Rule / Codes apply.

Florida Administrative Code 69A.60; Minimum Fire Provisions

NFPA 72, 2013
NFPA 70, 2014
Item 4:
Bi-Directional Amplifier plan review checklist discussion