NFPA Standards Council Meeting
Preliminary Hearings/Appeals Schedule

DOUBLETREE SURFCOMBER HOTEL
1717 Collins Avenue
Miami, Florida 33139

Tuesday, March 3, 2009 ORIGINAL

ITEM ONE:

1:00 - Agenda Item Number: 09-3-6-d

Appellant: J. Buss, Sure Signal Products

Appeal: TIA No. 946, NFPA, 72-2007 Edition

Document (& Section): NFPA 72, 11.3.5.3

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ITEM TWO:

1:30 - Agenda Item Number: 09-3-5-d

Appellant: W. Robinson, Prince George's County Govt.

Appeal: Issue TIA No. 936, NFPA 70-2008 Edition

Document (& Section): NFPA 70, 680.25

PROCEEDINGS HELD BEFORE THE STANDARDS COUNCIL MEMBERS

arrive at a decision today. That has to be finished up, written up and then ultimately issued. So it could range anywhere from a week to -- we've had decisions that have taken months.

So, you know, I'm not going to try to pin it down to tell you a week from now, you'll have a decision. If I do, I'll be wrong out of it. So you just kind of have to bear with us. I know both Council and staff work as rapidly as we can to get those out.

MR. BUSS: Thank you very much.

MR. PAULEY: With that, we are going to stay on the record and we're going to move directly into the second hearing. So gentlemen on TIA 936, if you'd like to move to the end of the table. I am going to take the opportunity to have anyone that was not in the room at the time when we did the introductions, if you would please introduce yourself at this point.

MR. OKLEY: George Okley, Senior Consultant, Bustman Division Cooper Industries.

MS. FULLER: Linda Fuller, NFPA staff.

MR. PAULEY: So we are now moving to agenda item 09-3-5d. This is an appeal on the, or for the issuance of TIA number 936, that is on NFPA 70.

Gentleman if you would just very quickly for the record reintroduce yourselves for this particular hearing.

MR. CLARK: Absolutely. I'm Rubin Clark.

MR. ROBINSON: I'm Wayne Robinson.

MR. PAULEY: And are there any statements from Council members? Mr. Carpenter?

MR. CARPENTER: James Carpenter, member of Council. I'd like to note too for the record that I am a member of the National Code Technical Correlating Committee. And as a National Correlating Committee member I participated in consideration and voting on the issues. I have, therefore, reviewed my obligation under the Guide for Conduct of Participants in the NFPA process, particularly section 3.5(d) of the Guide, to consider whether there is any reason for me to recuse myself from consideration of this appeal.

I have concluded that I do not have any views that are, or would appear to be, fixed concerning the issues, and I am fully able to give open and fair consideration to this appeal. For the record, therefore, I have considered the matter, and believe that I can fully, fairly and impartially fulfill my role as a Council member on this appeal.

MR. PAULEY: Thank you. Gentlemen we will do the same essentially as the previous hearing. You'll have about ten minutes to make your presentation and statements to the Council. I'll then open it up to question from Council members and then give you an opportunity for any closing remarks. So the floor is yours.

MR. CLARK: Good afternoon. May I first commend you on selecting Miami as a place to meet versus Boston, this week. Smart move and I hope you will make another smart move by issuing TIA 936. I am NFPA member 2556455 and owner of Consolidating Manufacturing International. I'm one of three manufacturers of ground mats and bonding grids. Erico (phonetic) and Harter Lightning Protection also make these products.

There's a huge misconception that these copper binding grids add costs to the construction of a swimming pool. Actually to the contrary, they reduce costs. Because the installed cost of a copper binding grid is less than the installed cost of rebar, yet some pool builders are using this alternate means with a single wire now, as a loophole to further reduce their costs and eliminate any equi-potential protection they have

in the pool decks.

Old timers will come up to me at the trade show booth and say, I've been building pools for thirty years, never had a problem. But if you're still building pools the way you did thirty years ago with rebar reinforcement in the deck, you're not going to have any problem. What's changing today is people are pouring decks with fibercrete, no rebar reinforcement. A lot of people think it's stronger. No metal in the deck to make an equi-potential plane. People utilize the pavers. So that's the reason for the equi-potential binding grid in the national electrical code.

Now working further to reduce the costs of these binding grids -- because when you make ground mats the variations are too many. You can't automate the production. But the copper binding grids for pools are already made in 2-foot wide and 3-foot wide configurations, number eight wire, twelve by twelve. So I invested in automation and I've brought the cost down to one third and one half of what it was when the code was originally adopted.

Now having said that, and this is a very important point to consider today, that we're not

talking about the means to obtain equi-potential binding in pool decks, but an alternate means. That brings me to the next point I'm here to speak on, the test that Neetrack (phonetic) conducted. The licensed PE, who designed the tests and conducted the test, Mr. Sashee Patel (phonetic). He's not able to be here today due to health reasons. He's having surgery tomorrow. So I told him I would try to answer any questions that you might have about the test.

When I was first notified that we were going with the 2008 version versus the 2005 version of an alternate means of binding the pool decks, I wanted to find out, well what's causing the change? So I called UL, spoke with Gary Siggins (phonetic). He said, well there's no tests. I said, can you do a test? No, we don't have the methods for doing the test. I called your office, said, there was a test, there has to be a test to substantiate the code change.

So I was sent the test but it was another test from Neetrack on a completely different subject matter. It was bonding the water in a pool with a none conductive shell. Completely irrelevant topic, completely irrelevant subject matter that

didn't apply. Somebody took one fine point in a statement in that test and extrapolated it. And we find now erroneously so, that they concluded a single wire will provide adequate protection for people if you bond the deck.

This test was a Neetrack test. The same person who conducted the water bonding test, conducted the test in a pool environment. Mr. Patel said, what do you want to do? I said, I want to compare the two different methods that the NEC has said is an alternate means to accomplish equi-potential binding of a pool deck. He said, okay.

He designed the test, conducted the test, there were licensed PEs there and he wrote the conclusion. The conclusion was that a binding grid by copper, like rebar, provides adequate protection of a person standing on the pool deck, but the single wire does not. Some comments were made and there was no baseline to test versus nothing, or versus rebar. Other comments were made that the way some of the percentages were calculated was intended to show a greater improvement of a copper grid over a single wire.

Now while those comments may be factually

true, they're completely irrelevant because again, we were testing one method per the NEC, or the other method per the NEC. So in fact the difference between the two if you read and I'll just summarize quickly, the worst performance of the binding grid performed better than the best performance of a single wire. In fact forty-eight out of fifty-four readings of the binding grid were under three volts of straight voltage on the pool deck.

All fifty-four points had five volts or over with a single wire. Half of them were in double digits and one was over twenty-four volts. Now all of this was with household current, attached to an iron pin, 160 feet away from the pool. So everyone thought the single wire would perform, but that was based on again, a misconception.

Now a few years ago a Senator's daughter was killed because a pool drain sucked her close. The Federal government comes out with the Virginia Graham Baker Act because the pool plumbers couldn't regulate themselves when building pools. Most pool builders do a fantastic job, but the pool industry is a big industry. And we can't have any problems, negative publicity and we certainly don't want

people getting hurt.

So I'm asking you today to let's not have the federal law come in when an elderly person with a pace maker is walking on a deck or a youngster rehabilitating, swimming in the pool, experiences stray current, and there's an accident, somebody dies or gets badly injured.

The final point I want to make is on procedures. The submitted -- the TIA has submitted virtually the same verbiage as the 2011 code cycle and it has great support for that. In fact the technical committee voted overwhelmingly to support the technical merits and with the agreement of the emergency nature. In fact the code making chair agreed with both of these. So I can't speak for the code making panel but it certainly -- or one can conclude that the 2011 cycle, the single wire alternate means is going away.

So I ask you, let's stay consistent. Why allow states, large pool states like California who are on the '05 code cycle now requiring a grid. If we don't issue the TIA, 2008 comes around, they don't require the grid for three years. 2011 comes around, it's put back in and they're going to require the grid. It's mass confusion. There's

already too much confusion on here. That's what the TIA is designed to do is to stay consistent to eliminate that.

The further procedural fact is that, the negative votes, I think we should allow the voters to re-decide or possibly eliminate theirs because an example, Mr. West's negative substantiation was based that he erroneously stated the test was commissioned by the sole manufacturer and implied impropriety. Well that's false because I just told you that two other large corporations also manufacturer this product. His reason for disagreeing with the emergency nature was that he said he didn't want to rush into the possibility that I implied an improper agenda and there was no danger. I think in Mr. Robinson's written appeal to you, he's also proven that to be false.

Another disagreement with the emergency nature, who also agreed with the technical merits, Mr. Krible (phonetic), said there was no increase costs or danger to the public and that wasn't demonstrated. But again Mr. Robinson has proven that false. Another negative vote was by Mr. Maldonado, contained five points. Mr. Robinson had refuted them all and I want to say one

here today and I quote, the grid under the deck was a large source of complaint because of the costs. The contractors were very pleased to be able to use a ground ring. Well sure they'd be pleased to use -- not have to use GFCI protection, not have to install fencing, a single main drain, et cetera, et cetera.

They're trying to use alternate means as a loophole to reduce the cost and not provide any adequate equi-potential binding. And the final negative vote was by Mr. Roth, three pages but in his first paragraph of technical substance, he actually agrees with the purpose of this TIA by stating that a conductive pool deck requires a grid but other perimeter surfaces do not. Again, this exemplifies the emergency nature because the rest of the three pages are fine points, more so on style versus substance, but people don't understand the code like he does.

The State of New Jersey right now is allowing a single wire in any pool on any deck regardless of pool shell construction. Now we can use a single wire so we don't have to use equi-potential binding.

MR. PAULEY: You've got about a minute left.

MR. CLARK: Okay. That's basically my points there. I'd just like to say again, let's stay consistent. Let's close the loophole and again it's the alternative means, it's not the means, it's the alternative means that we're asking to change here.

MR. PAULEY: Mr. Robinson, did you have anything you wanted to add in that last minute or are you here to answer questions?

MR. ROBINSON: Well I would give him my last minute if that's what's left because he's doing such a good job. I just want to let you know I'm just an electrician, I'm an inspector. And my whole issue is that when the 2008 application came out, I went to Boston and submitted a knitman trying to say, look let's hang on to 68026C, which had all the requirements for equi-potential binding until we get all this clarified because there's so much issues with utilities and actually hopefully, you received these two letters from both Georgia Power of people being shocked on pool decks. One of Mr. Roths comments was, there's no record of anybody getting hurt.

Well I'm going to tell you there's people getting injured all over the country. But the

utilities are the ones being contacted to mitigate these issues and it may not even be their issue. But since Harmonics, we're got multiple granite neutral systems that we didn't have fifty years ago. Just look how many pad-mouth transformers there are in the community now. Just take a look at that, a lot of neutral current circulating.

So without this equi-potential binding grids, until we can get to the bottom of where the stray burns -- where are they going go? You've got pool decks -- and again, the University of Michigan, the University of Wisconsin, the University of Minnesota, those did studies on agricultural areas under 547. It proves that equi-potential planes worked in agricultural areas and yet, we're thinking -- and even in my TIA, we give more protection for agricultural animals than we do for humans on a pool deck.

Now I don't know what else to say other than I hope that you have copies -- I have also an e-mail from Martin Page from Georgia Power. Georgia Power is coming out with their own set of requirements now because they're having problems with people being injured on pool decks. They going through driving ground rods every ten feet, and bonding

these wires together to establish equi-potential plane. So there's so much misconception of when you can use a single wire versus a grid and I'm trying to eliminate that until we get these issues resolved.

But that's what my knitman was about and that's what my TIA is about. It's about safety. I have no agenda. I came down here to support this TIA because I think it's important for safety issues. In my area, where I work in Maryland, we're not going to allow the single conductors. There's no proof with -- exactly with the Neetrack test, I mean the step potential, there's eighteen volts between a three-foot step. This is on a dry pool deck gentlemen and ladies. So I mean, this test is a legitimate test. There's data that a single conductor is going to the safety that we need for the public.

MR. PAULEY: Thank you, Mr. Robinson. Let me open it up now to questions from members of Council. Mr. Clary?

MR. CLARY: Probably to Mr. Robinson or Mr. Clark, on the test and I did read the report, I notice though they only did it at one pool site. I'm just wondering, do you think that's still a

valid test as opposed to doing it at a couple of sites to see if the results are similar?

MR. CLARK: I feel soil conditions may have an impact and I'm not certain what they were but and I do remember there being a requirement that everybody on site had insulated sole shoes. And Mr. Patel who also conducted the test for binding the pool water was surprised that so much of the current showed up with a single wire. And again this was 160 feet away on iron pin, he dialed down the household current to I think ninety-five volts if I remember correctly. So I don't know exactly the answer to your question.

MR. ROBINSON: At $45,000 a test, I don't -- this man is the only man I know who took it upon himself to get a test down and there's been no substantiation for any technical change to the code. There was no test and they changed the code without substantiation.

MR. CLARY: A follow up question. You indicated at the beginning of your presentation that there's you and two other manufacturers that make this particular --

MR. CLARK: Correct.

MR. CLARY: Are they as concerned as you are

with what's going on in the NEC, that it appears their product cannot -- also is it your contention that if this TIA is not accepted that your particular product is basically sort of out in the cold and can't be used?

MR. CLARK: The answer to the last question is partially true. There are several inspectors across the country that said we don't care what the '08 is, we're going to require a bonding grid of some sort, rebar or copper. So out in the cold, not totally, but, yes it would be for sure.

The answer to your first question is, I don't think they're concerned at all because they don't service the pool industry. It's a very small niche to them, I'm sure you're all familiar with Erico. Ground rods, they're the world's largest producer of ground rods. In fact I do private labeling products, some of my ground binding products. I made some products that they slide the ground rods on and the coding process to make the rods.

Harter Lightning protection, it's a very small portion for them because their sales are so much larger than mine. It's probably not worth they're time, where it is worth my time.

THE WITNESS: Okay. Thank you.

MR. PAULEY: Additional questions. Jim Pauly chair of Council. I guess I want to make sure for the record. I think Mr. Clark, pretty clearly understanding that you make the product that we're talking about being involved in the ground mat and I want to make sure for the record, I guess, Mr. Robinson had indicated you're an inspector. You have no commercial affiliation whatsoever with any of the products involved in this or any of the materials involved?

MR. ROBINSON: No, I've been an inspector for twenty-four years. That's what I do for a living.

MR. PAULEY: Thank you.

MS. SPENCER: Can I have a follow up to that?

MR. PAULEY: Sure.

MS. SPENCER: Amy Spencer, Council secretary. Do you have any affiliation of any kind of a manufacturer of devices, safety devices involved with the NEC.

MR. ROBINSON: I do in India, yes.

MS. SPENCER: Could you elaborate on that?

MR. ROBINSON: I manufacturer a product that I invented, a ground electro connection. And I have a manufacturer that manufacturers that product.

MS. SPENCER: And that's completely unrelated

to this here?

MR. ROBINSON: It has no bearing on this whatsoever.

MR. PAULEY: Mr. Gerdes, go ahead.

MR. GERDES: Ralph Gerdes, Council member. You indicated in the current cycle the technical committeed has voted on this issue and accepted this.

MR. CLARK: No, what I was saying was in the TIA, I looked at the reasons for the negative votes and I looked at the votes from the code making panel and they voted six to three to approve it. And my comment was it looked like there were a couple of these people either didn't have access to the specific incidents that Mr. Robinson had issues or maybe misunderstood something. That's why I was saying if you just eliminate one or change their vote, like I was saying one person gave two reasons, and both of those reasons actually the opposite is true. So logically speaking his vote would have to turn to be true. And would give even more than seventy-five percent vote.

MR. GERDES: To follow up, then. Have either one of you gentlemen submitted a public proposal to the committed for consideration?

MR. ROBINSON: I've submit -- but I did submit this, that's exactly what I did, the TIA.

MR. CLARK: For 2011 code cycle.

MR. ROBINSON: It's going to be a major issue if we go from using a single wire and go back to the grid system. If that happens because you're going to have areas -- inspectors are already confused over this alternate means. We didn't have these alternate means until 2008, actually 2005.

It incorporated the binding grid, where the 2008 incorporates a single method. And the language says if structural steel is available. Now what does that mean? If I do a pool that has structural steel in it, it's a conductive pool, then I have available structural. Now are they talking about perImeter services structural steel? Or are we talking about structural steel? When is structural steel not available, when they pour fibercrete decks. But I could pour fibercrete deck with a structural pool, structure reinforced steel pool.

So I have available, but since I have fibercrete and now what's going to happen is I don't have grid, I have a single wire in the fibercrete, but I'm going to have different sub

potentials between a structural steel pool and a fibercrete pool. So I'm even going to have more potential of injury in that application, because it's such a difference.

MR. CLARK: And that was one of my points I made was that Mr. Roth had elaborated extensively on this and again, the state of New Jersey said you can use a single wire on the deck regardless of pool shell construction. And Mr. Roth was saying several times, quite elaborately, that's not the intention, et cetera, et cetera. And again, my point was let's make it consistent and easy because they're not understanding what he understands.

MR. PAULEY: Jim Pauley, chair of Council. Just a follow up on Mr. Gerdes question. Mr. Robinson you indicated you made this exact proposal to the 2011 NEC.

MR. ROBINSON: Yes, sir.

MR. PAULEY: Did you also make a presentation to the committee on this at all or anything?

MR. ROBINSON: No.

MR. PAULEY: Just the proposal was submitted?

MR. ROBINSON: Travel was coming out of my pocket and I'm just a civil servant, it's tough to come to Miami.

MR. PAULEY: I guess the other question, again Jim Pauly, chair of Council. The other question I had and I think Mr. Robinson you had the information in your hands about the documentation that that was there, or claims of folks being -- electrical shock occurring on pool decks.

MR. ROBINSON: I submitted it to the chair, you're welcome to have this.

MR. PAULEY: I guess my question was just from those, do you know in those particular items, were those pool decks that had no bonding grid installed at all.

MR. ROBINSON: There's a couple of different scenarios. There's three or four issues with the one in Mississippi. Mississippi is tearing up pool decks because a single conductor does not provide adequate protection. They're using mesh and if the mesh is not tied to the number eight bond wire around the pool they get a difference of potential.

Actually I'm kind of concerned that code making panel 17 doesn't know about these issues in this country. Where just as an individual I can go out and start contacting people that I've met over years of going to II sessions that people are getting injured.

The power companies are having a terrible time with this. Because of litigation, they can't really come forward but yet they're having their own rules and regulations written to protect the public over the national electric code. We're going to have another set of standards and it's bad enough when you go to one place and you've got multiple codes. The municipality I work, we have a separate code. So now as an inspector, you're going to need to know additional codes with the utilities in order to do these inspections.

So if we can just fine tune whether or not the grid system the -- I mean the system we're going to use. Because the single conductor, we have no substantiation that a single conductor works for that and also there was no substantiation for the change. No technical substantiation for the change for 2008. How did it get into the code?

MR. PAULEY: Mr. Gerdes?

MR. GERDES: Talk to this issue that you submitted a proposal to the committee, you see, you think there's an emergency nature. Could you maybe hit on that again. What is the emergency?

MR. ROBINSON: The emergency nature is I've got people being shocked on pool decks that no one

else seems to know about but me. Code making panel 17 is not aware o it. The rural electric agencies are aware of the problems. Like I say Georgia Power, they've got a stray current division that deals strictly with pool decks.

MR. CLARK: And I received a call from Senior River Power (phonetic) myself. They looked us up on the internet and the engineer called me and said, I'm glad I found you because we're having these problems and we talked about how to rectify it.

And the other issue I was making that if the 2011 does go back as it seems, again, I can't speak for the code making panel, but as it seems that it will because of the support, then you have states, like California is a large pool state they're in '05 right now, they require bonding grids. But if we don't issue the TIA now and catch a lot of these states, the '08 comes out with a single wire, then 2011 is going to go back to requiring grid and it's already confusing enough.

MR. PAULEY: Dr. Clary?

MR. CLARY: I forget the name of the association, has the International Association of Electrical Inspectors, even the national, have they

put out a circular to the members about this issue?

MR. ROBINSON: The only thing I know -- you've got the president sitting there, he can probably speak to that better than I can. But the only thing I've seen is the changes in the -- that they've had articles in their magazines. It hasn't talked about the single wire versus the equi-potential binding grid.

MR. CLARY: So there may be some discussion on that but probably just amongst -- or maybe at a chapter level, or maybe on the blog or stuff like it, there's that no national --

MR. ROBINSON: Right. I think I'm going to generate one because I can't imagine I'm the only one that knows about stray current on decks. Just can't -- you know. If you look at Mississippi and you look at Georgia, two probably big pool states, okay, they're having major problems. So I don't understand why this hasn't filtered down to the rest of us.

MR. CLARK: Again a lot of it is because people are changing the way they're constructing decks. Pavers are becoming more popular, the costs are coming down. If they move a little when the earth shakes or changes, it's inherent in the

nature of the deck to have cracks. And they're going with fibercrete because they can save money. I had a driveway extension poured with fibercrete, it looks great, and it doesn't crack. But again you would use bonding grid underneath it or steel rebar, or anything else, any other mat. So that's one of the changes in the past in probably the last ten years that's brought on these problems now.

MR. PAULEY: Additional questions, members of the Council?

(No response from members of the Council)

MR. PAULEY: Gentlemen, five minutes for any closing remarks that you might have, anything that you want to finish up with you're welcome to do that at this point.

MR. ROBINSON: One quick comment, before I give the floor to Mr. Clark here is that I was in a pool show in New Jersey and I did a little seminar up there and ICC person up there, the code official for the state of New Jersey, they've gone to single wire. The interpretation for alternate means is now a single wire. And that's happening across the country. Vegas is the same way -- they can't wait to get to single wire. It was the chief of Vegas who told me that in the 2005 Boston seminar up

there. Let's just hold on until we get the information we need to make sure we're protecting the public. Let's don't jump to conclusion to go to a single wire because the state of Florida passed a law to go to a single wire, that's how we're here. They passed a law saying, we're going to a single wire, and guess what, we went to a single wire for the whole country.

MR. PAULEY: Mr. Clark.

MR. CLARK: The only other thing I'd like to add is we're not talking about changing the method. It's an alternative means and the builders are trying to use -- they're trying to use it as a loophole regardless of what the pool shell construction is and now just using a single wire, because they've always had to bond the metal within five feet of the water around the pool, because I make some bonding clamps specifically designed for the pool industry, that allow people to do that a lot easier. We've always had to do it and a lot of people are saying we already have a loop and it's four to six inches out any way. It's always been there. Thank you very much. I appreciate the work are guys are doing.

MR. PAULEY: Thank you. With that we will

bring the hearing to a close. I do want to remind you that the Council will deliberate and decide this issue and ultimately a decision will be issued by Ms. Spencer. No member of the Council, or any member of the NFPA staff is permitted to convey any information on this issue. It will come from the secretary of the Council only. We do appropriate both of you being here and we do appreciate the time you spend with the NFPA standards process and we appreciate your support of that process. And with that we will go off the record.

(Thereupon, the foregoing proceedings were concluded.)