



February 15, 2011

To: Senator Joan Hartley, Co-Chairman
Representative Steve Dargan, Co-Chairman
Members of the Public Safety and Security Committee

From: Bill Ethier, Chief Executive Officer

Re: **House Bill 6296, An Act Adopting the National Electrical Code, the International Plumbing Code, the International Mechanical Code, and the International Fuel Gas Code**

The HBA of Connecticut is a professional trade association with 1,100 member firms statewide, employing tens of thousands of Connecticut citizens. Our members, all small businesses, are residential and commercial builders, land developers, home improvement contractors, trade contractors, suppliers and those businesses and professionals that provide services to our diverse industry. Our members build 70% to 80% of all new homes and apartments in the state each year.

Summary & Background: The HBA of Connecticut strongly opposes HB 6296. The National Electrical Code (NEC) is a national model code written by the National Fire Protection Association (NFPA). The NFPA is different from the International Code Council (ICC) that writes many other model building codes, including the international codes referenced in HB 6296. Both NFPA and ICC update and amend their model codes on a three to four year cycle. Both organizations support themselves financially by selling their new code versions. The Connecticut State Building Code is made up of mostly ICC model codes and some NFPA model codes, with Connecticut specific amendments and exceptions. The current Connecticut State Building Code includes the 2005 NEC. The state Codes & Standards Committee within the Dept. of Public Safety is currently reviewing for adoption the 2008 NEC version, along with the 2009 versions of the ICC set of model codes, of which there are many.

Reasons to Oppose HB 6296:

- **Current law requires the state to adopt a State Building Code “based on a nationally recognized model building code.” Reference to any specific national model is not in the statute for good reason.** By not referencing any specific national model, the Codes and Standards Committee may review, adopt and coordinate the model codes it determines to be best for Connecticut. HB 6296 would severely restrict this beneficial goal.
- **The model codes are not perfect and they require technical review before adopting them as law.** House Bill 6296 would require the adoption of the latest revision to the NEC and other models referenced and subsequent versions within one year of publication. The language “as deemed necessary” is qualified by “but in no event later” This is contrary to the State Codes & Standards Committee’s beneficial practice of reviewing but not necessarily adopting each version of national model building codes. The state occasionally skips a model code version or waits for other states to adopt a specific version to see what problems arise or how known issues are addressed so that Connecticut can adopt better-informed amendments and exceptions. Skipping

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certain versions of model codes also saves the state money because the code adoption regulatory process is very expensive and time consuming. Thus, this bill will cost the state more money to implement.

- **Moreover, the 2008 NEC version contains specific requirements, not included in the currently used 2005 NEC, to which we strongly object.** These include the requirement to install arc-fault circuit interrupters (AFCI's) in every branch circuit in a new home, and the requirement to install tamper-resistant (TR) receptacles throughout a new 1 & 2 family home. Proponents of these requirements, including the Electrical Manufacturers Association, have argued that these are safety measures, but we urge you to review the attached documentation that seriously questions these safety claims. On the contrary, there are strong profit motives (to the tune of \$2 billion) for the electrical manufacturers that produce AFCI's and TR receptacles to promote the adoption of the mandatory installation requirements contained in the 2008 NEC. The model code organizations also have a vested interest in promoting mandatory adoption of each version of their codes because they make money by selling new books. **The important point relative to HB 6296 is that these technical arguments should be made before the State Codes & Standards Committee when, and if, it considers the adoption of the next version of the NEC and other model codes.** It is the only technically-competent body to determine whether a particular model code version should be adopted and if so with or without exceptions.
- **The training of electrical or other trade contractors that is conducted by certain organizations should be based on the current code that is in place (i.e., the State Building Code), not on a national model code that has yet to be adopted in Connecticut.** To argue that training must keep up with the model code adoption process makes no sense if for legitimate reasons the state does not adopt that latest version. Contractors, then, would be learning practices and code provisions that are not yet applicable to Connecticut, and may never be. Rather than change the law to accommodate current training practices, which produce substantial revenues for the organizations offering the training, we suggest their training practices should change when Connecticut's regulations change.
- **These bills are also contrary to the goals of the Coalition for the Adoption of a Unified Code (CAUC) to eventually have Connecticut adopt one, coordinated, unified set of codes by which building designers, building engineers, builders, subcontractors and code officials can use to ensure the safety of Connecticut's citizens in the most cost efficient manner as possible.** While we are one of the founding members of CAUC, we do not presume to speak for the coalition, but statutorily mandating the adoption of one specific national model code (e.g., NFPA's NEC) for one component of building construction (i.e., electrical) greatly subverts this goal.

Conclusion: For all of the reasons above, please do not support HB 6296. Let the state's Codes and Standards Committee decide which model code, which version and what exceptions, if any, may be appropriate for Connecticut. Thank you for the opportunity to comment on this legislation.

National Association of Home Builders Recommended State & Local Amendments to the 2008 Edition of the National Electrical Code (NEC)

Issue: Arc-Fault Receptacles

2008 NEC Section: Section 210.12 (B)

Recommended Amendment: Delete text as follows

~~(B) Dwelling Units. All 120-volt, single phase, 15- and 20-ampere branch circuits supplying outlets installed in dwelling unit bedrooms, family rooms, living rooms, parlors, libraries, dens, sun rooms, recreation rooms or similar rooms shall be protected by a listed arc-fault circuit interrupter, combination type installed to provide protection of the branch circuit.~~

Reason:

During the recent code revision cycle to the 2008 *National Electrical Code*, there was a lack of fire data used to support the expansion of arc-fault circuit interrupters (AFCI's) to all receptacles in the dwelling, let alone the mandatory installation of AFCI's in bedrooms. Looking at the latest data from NFPA in the report "The U.S. Home Product Report (Appliances and Equipment Involved in Fires)", by John R. Hall, Jr. of the Fire Analysis and Research Division of NFPA dated November 2005, the report shows that the annual average of fires in all homes is 372,900, with direct property damage of \$443,000,000. Of this number 32,000 (or 9% = \$39,870,000) of these fires are caused by "electrical distribution equipment." Of that 9%, only 14,500 (or 4% = \$17,720,000) of those fires are attributed to "fixed wiring, switches, outlets, and receptacles." And, there is no data or study to support that of these 14,500 fires the installation of an AFCI device would have prevented the fire. Using the U.S. Census Bureau data on building permits for 2004 (Table (S-3) Final) shows 1,656,413 one- & two-family dwelling units and 413,664 multifamily units for that year.

Calling this a "limited approach to the expansion of AFCI" still does not result in any cost-benefit to society. It just needlessly increases the cost of housing. There is still no justification for any jurisdiction to burden its citizens with this unneeded expense. As it was during the 1999 revision cycle, there has been a failure to provide any fire study or cost benefit study to support installing these devices in bedrooms. Since then NO data or study has ever been assembled to support the expansion to the whole house.

There are typically 20 (twenty) 120-volt, single phase, 15- and 20-ampere branch circuits in each one- & two-family dwelling unit, and 10 in each multifamily dwelling unit. Using these numbers, there will be approximately 33,128,260 AFCI's in one- and two- family dwellings and 4,136,640 for multifamily units, for a total of 37,264,900 AFCI's. Using a wholesale cost of \$34.00 per breaker, marked-up the industry standard percentage of 66%, produces a cost per breaker of \$56.44 to the home owner. In all, the average annual total cost to the public for the mandatory installation of AFCI's will be \$2,103,230.956 (\$1,267,006,600 wholesale). That is 2 BILLION, 130 MILLION, 230 THOUSAND, and 956 DOLLARS, per year. Using current fire loss data, society will be spending \$2,103,230.956 per year to cover losses of only \$39,870,000 [and that is assuming AFCI's will prevent ALL electrical distribution equipment caused fires].. That means spending 52 times the amount of money that would be loss if the devices were not installed, and that is if the devices work 100% of the time. If you use the losses relating only to "fixed wiring, switches, outlets, and receptacles" (the part of the wiring that is claimed to be protected by AFCI breakers) the ratio to money spent relative to monetary loss (\$17,720,000) is 119 times, again, if they work 100% of the time.

If you break that down by each state, that lack of a cost-benefit becomes apparently clear. All jurisdictions that contemplate adopting the 2008 NEC, especially jurisdictions that are required by law to show a cost-benefit in the adoption, are encouraged to look closely at this cost-benefit fact and not adopt the 2008 NEC until all provisions requiring AFCIs are stricken (Section 210.12). In addition, there is no data to support the contention of neither "excellent track record", nor information that these "installations have found numerous wiring errors" or "they have found wiring damage and equipment damage that could have been a potential sources of fire." That statement alone provides no correlation between the purported problems and the use of AFCI's. The Panel needs to reconsider the mandatory installation of AFCI's, let alone the expansion of requiring these devices for all 120-volt, single phase, 15- and 20-ampere branch circuits in dwelling units. Until true field test data on the efficacy of AFCI's can be directly related to saving society monetary loss there is no cost benefit in this provision.

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National Association of Home Builders Recommended State & Local Amendments to the 2008 Edition of the National Electrical Code (NEC)

Issue: Tamper-Resistant (TR) Receptacles

2008 NEC Section: Section 406.11 Tamper-Resistant Receptacles

Recommended Amendment: Delete text as follows

~~406.11 Tamper-Resistant Receptacles in Dwelling Units. In all areas specified in 210.52, all 125-volt, 15- and 20-ampere receptacles shall be listed tamper-resistant receptacles.~~

Reason:

This new requirement is not based on sound technical information that adequately substantiates that such a requirement will result in protecting small children from burns or injury. During the previous code revision cycle to the *National Electrical Code*, the supporting documentation for the proposal was based on the summarization of several National Electronic Injury Surveillance System reports from 1991-2001. The NEISS system gathers its data by sampling a group of monitored hospitals for the total number of injuries treated. They then take these figures and calculate the estimated national average. The NEISS reports do not provide any supporting information of where the child was located at the time the injury occurred, much less that that all incidents occurred in dwelling units or if any child safety devices were present at the time the injury occurred. There is no scientific research available which has proven tamper-resistant receptacles are more effective than other safety devices that are currently available on the market. The fact sheet, produced by the National Fire Protection Association, states that TR receptacles are preferred over plastic safety caps for the reason that the caps may be lost and may be a choking hazard for some ages.

Based on the supporting information given at the time of the proposal, it is still unclear why dwellings were singled out among all other related occupancies where children are found and often left unattended. In the substantiation it was noted that these devices are designed to protect children when their parents or guardians turn away for that split moment when a tragedy could occur. This type of tragedy could occur in any number of occupancies that children are present, not just in one- and two-family dwellings. As written, the proposal is too broad in scope and requires tamper-resistant receptacles in areas of the home that should not pose a threat to unattended children. Receptacles that are not readily accessible or that are dedicated for equipment should not be required to be tamper resistant. Examples of these areas that tamper-resistant receptacles should not be required are those found in attics, crawlspaces, mechanical rooms, behind equipment such as dishwashers, stoves, refrigerators, countertops, etc. To require tamper-resistant receptacles in these and other areas, not accessible to children under the age 4, shows a complete lack of forethought of the code requirement and a lack of common sense on the part of the committee that approved the proposal. To arbitrarily require without any supporting statistics or data linking these areas to any recorded instance of an injury, shows a complete lack of due process.

Another concern that was shared by many on the technical review committee was the amount of force that must be applied to insert cords into the tamper-resistant device and how it will affect the elderly community. The devices are designed in a way that the springs will not open unless the prongs are properly aligned with the shutters and are receiving equal amounts of pressure. Many on the panel voiced their opinions that there was a lack of product testing showing whether there will be an impact to the aging community's ability to use the new devices.

NAHB urges all jurisdictions that will be adopting the 2008 edition of the National Electrical Code to amend by deleting Article 406.11.

Notes/additional background:

During the 2008 revision Cycle, the National Electrical Manufacturers Association submitted the proposal to require tamper-resistant receptacles in all areas of a dwelling as indicated in Article 210.52 of the NEC®. Over 29 negative comments were submitted in response to the proposal and all 29 comments were rejected by the technical committee. The negative comments were submitted by electrical contractors, electrical inspectors, and some manufacturers. Below is a list of concerns that were raised by negative comments:

1. The required force to insert cords into the device may prove too much for the elderly or disabled.
2. There is no scientific data directly comparing current available safety devices to tamper-resistant receptacles to support the claim that TR are more effective and will reduce the number of accidents.
3. That the proponent should provide data listing the areas of the dwelling where injuries have occurred, thereby proving the need for tamper receptacle in areas such as attics, crawlspaces, mechanical rooms, countertops and other areas where the receptacles are normally out of reach of children.
4. At the time the proposal was approved, it was unknown whether any manufacturers were producing tamper-resistant devices that were compatible or integrated with arc-fault and ground-fault circuit interrupters.
5. The supporting documentation submitted by the proponent clearly stated "the results of these incidents are rarely fatal", and that further research should be conducted along with more product development before any such mandate should be implemented.
6. That the technical committee should remember, the code is not able to protect each person, in every situation, from every conceivable harm and should not be used as a tool to differ the responsibilities of the parent or caregiver who should be monitoring the children.
7. That the substantiation lacked any credible justification for disallowing the use of plastic safety caps other than claiming that they could be lost or become a choking hazard.
8. Why limit tamper-resistant receptacles to dwellings? There are several other occupancies that do not require these devices, yet children are present and the receptacles are accessible.
9. Tamper-resistant receptacles should be an option for dwellings that children occupy and not mandatory for dwellings where children are not present.

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