



DRAFT MINUTES
NFPA 70-2014 TASK GROUP
(TECHNICAL SYSTEMS
SUBCOMMITTEE)

May 25, 2016

Via Teleconference

DRAFT MINUTES
MANUFACTURED HOUSING CONSENSUS COMMITTEE (MHCC)
NFPA 70-2014 TASK GROUP MEETING
(TECHNICAL SYSTEMS SUBCOMMITTEE)

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Call to Order and Roll Call

NFPA 70-2014 Task Group Chairman, William Freeborne, called the meeting to order at 1:02 p.m. (Eastern) and welcomed the participants.

Kevin Kauffman, Program Manager of the Administering Organization (AO) Home Innovation Research Labs, called the roll and announced that a quorum was present. Guests were asked to introduce themselves. See [Appendix A](#) for a list of meeting participants.

Introduction and Opening Remarks

Pamela Beck Danner, Administrator of the Office of Manufactured Housing Programs (DFO), welcomed the Task Group members. DFO Danner noted that this is a meeting of the NFPA 70-2014 Task Group (Technical Systems Subcommittee) of the Manufactured Housing Consensus Committee (MHCC) and that the meeting notice was published in the April 20, 2016, *Federal Register*.

DFO Danner welcomed William Freeborne as the new Chairman of the Technical Systems Subcommittee as well as the NFPA 70-2014 Task Group.

Approval of the Minutes

Motion to approve the minutes of the January 19, 2016, NFPA 70-2014 Task Group meeting.

Maker: James Demitrus

Second: Don Iverson

The motion carried.

New Business

Review submitted proposed amendments to NFPA 70-2014, National Electrical Code.

John Weldy and Frank Brubaker provided a list of proposed amendments to the Task Group ([Appendix B](#)) in the event that the NFPA 70-2014 is to be adopted. Below is a list of actions regarding these *proposed* amendments.

For the purpose of the first items up for discussion, Don Iverson provided an explanation of the differences between Ground-Fault Circuit-Interrupters (GFCIs) and Arc-Fault Circuit-Interrupters (AFCIs). The GFCI protects people from shock. The AFCI includes a small chip that knows which sine waves are acceptable from appliances, and which ones are not. It will trip if it does not recognize the sine wave signature, thereby protecting property from a potential fire.

NFPA 70-2014 §210.8 Ground-Fault Circuit-Interrupter Protection for Personnel.

(A)(7) Sinks — where receptacles are installed within 1.8 m (6 ft) of the outside edge of the sink

Exception: Receptacles installed for refrigerators, disposals, dishwashers, and trash compactors are not required to be protected by GFCI's.

~~*(D) Kitchen Dishwasher Branch Circuit. GFCI protection shall be provided for outlets that supply dishwashers installed in dwelling unit locations.*~~

DISCUSSION:

Don Iverson provided background, noting that in 2014 language was removed from the section:

(A)(7) Sinks — ~~located in areas other than kitchens~~ where receptacles are installed within 1.8 m (6 ft) of the outside edge of the sink

This means that any appliance within 6 ft of that sink, except dishwashers, which are covered under another code section, will require GFCI protection including refrigerators and disposals. Mr. Iverson also noted that he disagreed with the proposal to strike item D.

There was a question regarding 24 CFR Part 3280 not requiring AFCI. Richard Mendlen confirmed that AFCI is not currently required in the HUD code, but if an AFCI is installed, it must comply with the NEC.

Frank Brubaker explained that in previous versions of the NEC, GFCIs were required for any receptacles serving a “countertop” and the 2014 version expanded on this with the 6 ft requirement. (So the exception would be any outlet serving a countertop would be GFCI protected.)

Don Iverson asked the Task Group to take a moment to think about this proposal. If the Task Group approves the action, then the code will NOT move forward and will be back where it started.

Gregory Miller asked about the risk of shock between disposals, dishwashers, and trash compactors.

Don Iverson replied that today most kitchen appliances are provided with stainless steel exteriors. Dishwashers are installed in close proximity to the sink exposing them and any potential wiring damage to water, thereby posing risk of shock. The same is true with refrigerators and trash compactors.

Don Iverson further explained his position against the proposed exception, specifying that if the Task Group accepts the proposed exceptions, there would continue to be no protection from appliances in dedicated spaces listed in 24 CFR §3280.806(b).

§3280.806 Receptacle outlets.

(b) All 125-volt, single-phase, 15- and 20-ampere receptacle outlets installed outdoors, or in compartments accessible from outside the manufactured home, and in bathrooms, including receptacles in light fixtures, must have ground-fault circuit-interrupter protection for personnel. Ground-fault circuit-interrupter protection for personnel must be provided for receptacles serving countertops in kitchens and receptacle outlets located within 6 feet of a wet bar sink, except for receptacles installed for appliances in dedicated spaces, such as dishwashers, disposals, refrigerators, freezers, and laundry equipment.

William Freeborne said he would be in favor of accepting NFPA 70-2014 because there have been many technical improvements since 2005, including GFCIs, AFCIs, and appliances. He added that currently HUD Code incorporates by reference NFPA 70-2005 and it would be detrimental to the industry to go backwards.

Mark Weiss said he was concerned with unintended consequences regarding manufactured housing in terms of location and cost.

DFO Danner clarified that there are two different concepts dealing with NFPA 70-2014. The first proposes NFPA 70-2014 be adopted with exceptions. The second proposes going through the NEC and deciding yes or no.

James Demitrus stated that he has reviewed the 195 references in the standard and in most cases these changes are already being incorporated. The issue of concern is anywhere there is a potential interaction between electricity and water and how people are protected from shock. The NPFA 70-2005 does not address this; however, the NFPA 70-2014 does address this important issue.

Alan Spencer stated that the Task Group was tasked with identifying the differences between the 2005 and 2014 versions of the NPFA 70, and the implications regarding acceptance/cost will be discussed later.

James Demitrus asked what was the rationale that lead to the requirement of GFCIs. Should accident/fire reports be reviewed? What is the cost of lost lives and/or property?

Richard Mendlen provided an example using the tamper-resistant receptacle data that shows 2,000 to 4,000 children per year are injured, according to the Consumer Product Safety Commission (CPSC).

Don Iverson reported that, according to the CPSC, seven children a day were being burned or shocked by inserting objects into receptacles. As a result, the 2008 NEC required the tamper-resistant receptacles; however, even before they were required by the code, hospitals and other facilities installed tamper-resistant receptacles. GFCIs were introduced in the 1968 NEC to protect consumers against shocks from pool pumps and deaths from those shocks were reduced by 50 percent. Since 1968, the protection has expanded. In the 1999 NEC, AFCIs were introduced to reduce the risk of fires due to faulty or worn wiring in homes or overloaded and sparsely-placed receptacles. There is no real data available regarding AFCIs due in part to jurisdictional variations in fire department reporting.

Don Iverson acknowledged the need to keep manufactured housing affordable, but asked at what cost. He said the person living in a manufactured home deserves the same protections as someone living in a stick-built house who is protected because it is required.

If we retain the exception, the 2014 removes “countertop” from the equation and replaces the language with “within 6 feet.”

Motion to recommend that the MHCC Technical Systems Subcommittee approve the NFPA 70-2014 §210.8 as written without modification.

Maker: Frank Brubaker

Second: James Demitrus

The motion carried.

NFPA 70-2014 §210.12 Arc-Fault Circuit-Interrupter Protection.

(A) Dwelling Units. All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in dwelling unit ~~kitchens~~, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, ~~laundry areas~~, or similar rooms or areas shall be protected by any of the means described in 210.12(A)(1) through (6):

DISCUSSION:

Frank Brubaker explained that John Weldy was pointing out that NFPA 70-2014 §210.12 is overridden by §550.25, which is the governing section for manufactured housing and it does not include arc fault provisions for kitchen and laundry areas.

Mark Weiss asked the cost implications if the NFPA 70-2014 is adopted and AFCIs are then required everywhere except kitchen and laundry areas.

James Demitrus also would like to get more information on costs.

Frank Brubaker said based on cost research between the 2008 and 2014 NEC, there will be an average of \$300 per house in product costs, as standard breakers cost about \$2 and arc breakers about \$27. Manufacturer costs will be less than a homeowner going to a box store.

Al Spencer said there is an average of \$580 of added cost, based on his review of the NEC 2005-2008-2014.

Don Iverson reviewed the cost increases in Ohio based on his research from 2008 to 2014, and said it was \$160 for a 900 sq ft home and \$205 for a 1,700 sq ft home.

Mark Weiss noted that the \$300 per house number is product cost without the consideration of design changes and labor costs. Mr. Weiss agreed to provide information on the retail cost consequences.

Don Iverson said this would be an opportunity to expand the manufactured housing market by making the product up-to-date with the NEC code as it would make manufactured housing more acceptable to urban renewal markets.

Motion to recommend that the MHCC Technical Systems Subcommittee approve NFPA 70-2014 §210.12 (A) as written without modification.

Maker: William Freeborne

Second: James Demitrus

The motion carried.

James Demitrus requested the Task Group obtain hard figures on life safety and property damage that GFCI and AFCI requirements are intended to protect. A \$300 to \$500 increase is significant, but not if it saves lives. He would like to provide enough information to the MHCC Technical Systems Subcommittee to accept or reject this recommendation.

Mark Weiss agreed that GFCIs are likely a life safety issue, but asked if the same was true of AFCIs. He said AFCIs were presented as a property protection issue that could potentially become a life safety issue. He would like some more information.

Don Iverson agreed to provide William Freeborne with additional information that could be disseminated to the Task Group.

NFPA 70-2014 §210.52(E)(3) ...at least one receptacle accessible from Balconies, decks and porches shall be placed not more than 6-1/2 ft. above walking surface. (Any size porch or deck)

(Note: John Weldy's proposal is based on Oregon amendments.)

Exception: Decks or porches located at grade level with an area of less than 20 sq. ft. are not required to have an additional receptacle installed.

DISCUSSION:

Currently, there is only one receptacle required on the exterior of a manufactured home.

Richard Mendlen read:

NFPA 70-2014 §210.52(E)(3) Balconies, Decks, and Porches. Balconies, decks, and porches that are attached to the dwelling unit and are accessible from inside the dwelling unit shall have at least one receptacle outlet accessible from the balcony, deck, or porch. The receptacle outlet shall not be located more than 2.0 m (6½ ft) above the balcony, deck, or porch walking surface.

Questions were raised regarding the definition of a porch and if this requirement includes an alcove. While it does seem practical to include an external receptacle in an alcove, it does not seem practical to provide an external receptacle to an egress landing. It was agreed that there needed to be an exception to §210.52(E)(3) as it pertains to manufactured housing.

Motion to recommend that the MHCC Technical Systems Subcommittee provide an exception to NFPA 710-2014 §210.52(E)(3) as follows:

Exception: Balconies, decks, or porches with an area of less than 20 sq ft are not required to have an additional receptacle installed.

Maker: William Freeborne

Second: James Demitrus

The motion carried.

NFPA 70-2014 §406.12 Tamper-Resistant Receptacles.

~~(A) Dwelling Units. In all areas specified in 210.52, all nonlocking type 125 volt, 15 and 20 ampere receptacles shall be listed tamper-resistant receptacles.~~

DISCUSSION:

Frank Brubaker suggested that, based on earlier discussions, the Task Group accept §406.12(A) with no revisions.

Don Iverson informed the Task Group that this action would require all outlets in the home to have tamper-resistant receptacles unless they are located 5½ ft high, i.e., outlets for microwaves.

Mark Weiss asked if tamper-resistant receptacles were already the current practice and if there were any additional costs associated with this action. A Task Group member informed him they are currently the practice with modular homes, but they are not required in HUD Code. The cost increase was about \$.66 per receptacle at factory cost.

Motion to recommend that the MHCC Technical Systems Subcommittee approve NFPA 710-2014 §406.12(A) as written without modification.

Maker: Frank Brubaker

Second: James Demitrus

The motion carried.

NFPA 70-2014 §550.4 General Requirements

(A) Mobile Home Not Intended as a Dwelling Unit.

(B) In Other Than Mobile Home Parks.

Delete in entirety without substitution.

DISCUSSION:

Frank Brubaker explained that John Weldy's reasoning to delete item (A) was based on it not really pertaining to manufactured housing.

Richard Mendlen questioned the reasoning to delete item (B):

NFPA 70-2014 §550.4 General Requirements.

(B) In Other Than Mobile Home Parks. Mobile homes installed in other than mobile home parks shall comply with the provisions of this article.

After reading the provision, it was decided that item (B) also does not really pertain to manufactured housing.

Motion to recommend that the MHCC Technical Systems Subcommittee provide an amendment to NFPA 710-2014 §550.4(A) & (B) by striking these two sections.

Maker: William Freeborne

Second: James Demitrus

The motion carried.

NFPA 70-2014 §550.13(B) Ground-Fault Circuit Interrupters (GFCI)

~~...The exceptions in 210.8(A) shall be permitted.~~

Exceptions:

(1) Receptacles that are not readily accessible and are supplied by a branch circuit dedicated to electric snow-melting, deicing, or pipeline and vessel heating equipment shall be permitted to be installed in accordance with 426.28 or 427.22 as applicable.

(2) A receptacle supplying only a permanently installed fire alarm or burglar alarm system shall not be required to have ground-fault circuit-interrupter protection.

DISCUSSION:

Mark Weiss also pointed out that a fire alarm should not be cut off by a GFCI.

Richard Mendlen read:

24 CFR §3280.209(D)(2) Smoke alarm requirements.

(2) Each smoke alarm whose primary power source is the home electrical system must be mounted on an electrical outlet box and connected by a permanent wiring method to a

general electrical circuit. More than one smoke alarm is permitted to be placed on the same electrical circuit. The wiring circuit for the alarm must not include any switches between the over-current protective device and the alarm, and must not be protected by a ground fault circuit interrupter.

The Task Group ultimately decided this issue is moot as the exceptions were already covered in the code and chose not to address.

No vote required.

Consider replacing Subpart I of 24 CFR 3280 with incorporation by reference (IBR) of applicable provisions of NFPA 70-2014, National Electrical Code.

William Freeborne noted the adoption of the NFPA 70-2014, National Electrical Code would not incorporate the entire NFPA 70, but only the sections referenced in the Manufactured Home Construction and Safety Standard 24 CFR Part 3280 ([Appendix C](#)). Mr. Freeborne agreed to disseminate his notes to the Task Group for members to provide their input on the impact the NFPA 70-2014 will have on the sections listed.

Note: In addition to the articles of the NEC currently referenced in 24 CFR Part 3280, any additional articles of the NFPA 70, NEC-2014 recommended for adoption such as articles 210.8, 210.12(A), 406.12, or modifications to 210.52(E)(3) would also need to be Incorporated by Reference as part of the final MHCC recommendation.

Richard Mendlen reminded the Task Group that as they proceed with their review to remember that the comparisons should be made from the 2005 NFPA 70 to the 2014.

Don Iverson also volunteered to help with the process.

Open Discussion

During the meeting, there were questions regarding voting procedures of the Task Group. James Demitrus requested the Federal Advisory Committee Act (FACA) language.

HUD staff will provide the AO with copies to disseminate to the members of the MHCC. It is a short piece of legislation that explains what our duties are and how it plays into the MHCC Charter.

The NFPA Task Group concluded its session at 3:46 p.m.



MANUFACTURED HOUSING CONSENSUS COMMITTEE

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APPENDIX A: ATTENDEE LIST

	NFPA 70 Task Group Members (MHCC Technical Systems Subcommittee)	Attendance
MHCC Members	William Freeborne (Chair)	Y
	James Demitrus	Y
Others	Sean Oglesby	N
	Manual Santana	N
	Lois Starkey	N
	Mark Weiss	Y
	Don Iverson	Y
	Frank Brubaker	Y

HUD Staff

Pamela Beck Danners (DFO)
 Teresa Payne
 Eric Bers
 Victor (Vic) Ferrante
 Leo Huott
 Patricia McDuffie
 Jason McJury
 Richard Mendlen
 Demetress Stringfield
 Gregory Miller
 Angelo Wallace

AO Staff

Kevin Kauffman
 Nay Shah
 Tanya Akers

Guests

Rick Hanger, MHCC
 Tom Heinemann, MHI
 Timothy O’Leary
 Leo Poggione, MHCC
 Alan Spencer, MHCC
 Jonathan Stewart, NEMA



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APPENDIX B: PROPOSED AMENDMENTS

MHCC Technical Subcommittee: NFPA 70-2014

Proposed 2014 NEC Amendments

210.8- Deleted in entirety without substitution. See 550.13(B) for GFI requirements. *John Weldy*

210.8 Ground-Fault Circuit-Interrupter Protecton for Personnel *Frank Brubaker*

(A)(7) Sinks — where receptacles are installed within 1.8 m (6 ft) of the outside edge of the sink

Exception: Receptacles installed for refrigerators, disposals, dishwashers, and trash compactors are not required to be protected by GFCI's.

~~(D) Kitchen Dishwasher Branch Circuit. GFCI protection shall be provided for outlets that supply dishwashers installed in dwelling unit locations.~~

210.12- Deleted in entirety without substitution. See 550.25 (B) for Arc-Fault requirements. *John Weldy*

210.12 Arc-Fault Circuit-Interrupter Protection *Frank Brubaker*

(A) **Dwelling Units.** All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in dwelling unit ~~kitchens~~, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, ~~laundry areas~~, or similar rooms or areas shall be protected by any of the means described in 210.12(A) (1) through (6):

210.52(E)(3): At least one receptacle accessible from Balconies, decks and porches shall be placed not more than 6-1/2 ft. above walking surface. (any size porch or deck).
Exception: Decks or porches located at grade level with an area of less than 20 sq. ft. are not required to have an additional receptacle installed. John Weldy based on Oregon amendments. May not be relevant if 550.13(D) takes precedent.

406.12 Tamper-Resistant Receptacles *Frank Brubaker*

(A) **Dwelling Units.** In all areas specified in 210.52, all non-locking type 125 volt, 15- and 20-ampere receptacles shall be listed tamper resistant receptacles.

550.4(A) & B: Delete in entirety without substitution. *John Weldy*

550.13(B) Ground-Fault Circuit Interrupters (GFCI). *John Weldy*

The exceptions in 210.8(A) shall be permitted.

Exceptions:

- (1) Receptacles that are not readily accessible and are supplied by a branch circuit dedicated to electric snow-melting, deicing, or pipeline and vessel heating equipment shall be permitted to be installed in accordance with 426.28 or 427.22 as applicable.
- (2) A receptacle supplying only a permanently installed fire alarm or burglar alarm system shall not be required to have ground-fault circuit-interrupter protection.

Arc-Fault Circuit-Interrupter Protection. *John Weldy based on 2011 NEC and DE amendment to the 2014 NEC*

550.25(B) Bedrooms of Mobile Home and Manufactured Homes. All branch circuits that supply 125-volt, single-phase, 15- and 20-ampere outlets installed in ~~kitchens, family rooms, dining~~

~~rooms, living, rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas of mobile homes and manufactured homes shall be protected by arc-fault circuit interrupter(s).~~ Smoke alarms shall not be placed on branch circuits protected by arc-fault circuit interrupter.



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APPENDIX C: NFPA 70-2005 MHCSS IBR LIST

(4) NFPA No. 70-2005, National Electrical Code, IBR approved as follows:

(i) Article 110.22, IBR approved for §§3280.803(k) and 3280.804(k).

(ii) Article 210.12(A) and (B), IBR approved for §3280.801(b).

(iii) 220.61, IBR approved for §3280.811(b).

(iv) Article 230, IBR approved for §§3280.803(k) and 3280.804(k).

(v) Article 250.24, IBR approved for §§3280.803(k) and 3280.804(k).

(vi) Article 250.26, IBR approved for §§3280.803(k) and 3280.804(k).

(vii) Article 250.28, IBR approved for §§3280.803(k) and 3280.804(k).

(viii) Article 312.2(A), IBR approved for §§3280.803(k) and 3280.804(k).

(x) Table 314.16(A), IBR approved for §§3280.808(m) and 3280.808(q).

(ix) Article 314.23(B), IBR approved for §§3280.808(m) and 3280.808(q).

(xi) Article 406.3, IBR approved for §3280.807(d).

(xii) Article 410.4(D), IBR approved for §3280.805(a).

(xiii) Article 440, IBR approved for §3280.805(a).

(xiv) Article 440.65, IBR approved for §3280.801(b).

(xv) Part II of Article 550, IBR approved for §§3280.801(a) and 3280.801(b).

(xvi) Article 550.25(a), IBR approved for §3280.801(b).

(xvii) Article 680.70, IBR approved for §§3280.607(c) and 3280.801(a).

(xviii) Article 680.71, IBR approved for §§3280.607(c) and 3280.801(a).

(xix) Articles 680.72, IBR approved for §§3280.607(c) and 3280.801(a).