NFPA Technical Committee Document Proposal Form

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Please indicate organization represented (if any) U.S. Consumer Product Safety Commission

1. a) **NFPA Document Title** National Electrical Code
   b) **NFPA No. & Edition** 70-2002 c) **Section/Paragraph** 210.8 (A)
2. **Proposal Recommends** *(check one)*: ☑ **new text** ☐ **revised text** ☐ **deleted text**
3. **Proposal.** *(Include proposed new or revised wording, or identification of wording to be deleted.)* Note: Proposed text should be in legislative format, that is, use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (~~deleted wording~~).
   (See attachment for Proposal)
4. **Statement of Problem and Substantiation for Proposal.** Note: State the problem that will be resolved by your recommendation. Give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.
   (See attachment for Statement of Problem and Substantiation for Proposal)
5. ☑ **This Proposal Is Original Material.** Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.
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Signature ***(Required)*** William A King Jr

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PROPOSAL.

Section/Paragraph: Art. 210, Part I. General Provisions, para. 210.8 (A)

Replace the existing language in 210.8(A) with the following:

210.8 Ground-Fault Circuit-Interrupter Protection for Personnel

FPN: See 215.9 for ground-fault circuit-interrupter protection for personnel for feeders.

(A) Dwelling Units. All 125-volt, single phase, 15- and 20-ampere outlets installed in the locations specified in (1) and (2) shall have ground-fault circuit-interrupter protection for personnel.

(1) Receptacle outlets on general-purpose and individual branch circuits installed as required in 210.52 and for other purposes

Exception No. 1: Receptacles that are not readily accessible and that are located in garages, unfinished basements, and accessory buildings.

Exception No. 2: A single receptacle or a duplex for two appliances located in a garage, unfinished basement, or accessory building, with dedicated space for each appliance that, in normal use, is not easily moved from one place to another and that is cord-and-plug connected in accordance with 400.7(A)(6), (A)(7), or (A)(8).

Exception No. 3: A receptacle outlet for refrigeration equipment.

Exception No. 4: A receptacle for security equipment, smoke/fire alarm, carbon monoxide alarm, medical appliance, or other life-safety equipment.

(2) Outlets for boat hoist motors and associated equipment wiring

STATEMENT OF PROBLEM AND SUBSTANTIATION FOR PROPOSAL.

Approximately 200 people are electrocuted each year in incidents in and around the home; this number dipped to 170 in 1999, the most recent year reported. (Reference: CPSC Report dated July 2002 "1999 Electrocutions Associated with Consumer Products", available on CPSC web site (www.cpsc.gov) or from CPSC Freedom of Information Office. Copies provided to NFPA with this proposal.)

Analysis of CPSC investigations of electrocution incidents indicates that significant numbers occur when consumers come in contact with energized circuit conductors and ground associated with appliances, tools and equipment connected to receptacle outlets

not presently required by the *NEC* to be provided with ground-fault circuit-interrupter (GFCI) protection for personnel. Example after example can be cited. The following is a selection of those cases investigated by CPSC where the receptacle outlets were located in areas of dwellings not presently required by the *NEC* to provide ground-fault circuit-interrupter protection for personnel.

Middleburg, FL September 14, 2000 A 17-year-old male electrocuted when he contacted a portable, floor fan in the bedroom of his home. CPSC Case No. 001108HCC0080.

Winder, GA May 29, 1998 A 32-year-old female and her 10 year old son electrocuted when they contacted a band saw in the workshop in their home. CPSC Case No. 990316HCC2327.

Macon, GA July 22, 1998 A 39-year-old female electrocuted when she touched an antique lamp in the master bedroom of her home. CPSC Case No. 990316HCC2328.

Portland, OR April 15, 1998 A 49-year-old male electrocuted when he touched exposed conductors on a damaged power cord of a portable saw connected to a hallway receptacle outlet while working alone remodeling an apartment. CPSC Case No. 990104CCC3105.

Brooklyn, NY August 1, 1998 A 1-year-old male electrocuted when he bit into the electrical cord of an stereo amplifier in the living room of a residence. CPSC Case No. 981110HCC0083.

Hartville, MO April 17, 1998 A 2-year-old female electrocuted when she touched exposed electrical wires energized from a 110-volt ac receptacle outlet under a kitchen table. The victim was also in contact with the heating system vent cover. CPSC Case No. 980827HCC2807.

Dexter, NM April 24, 1997 A 2-month-old male electrocuted by a heating pad. The pad had a damaged cord with tape repairs. CPSC Case No. 990609CCC3365.

Cincinnati, OH July 16, 1997 A 9-month-old female electrocuted when she contacted the bare wires of the cord for a pedestal fan. CPSC Case No. 990408HCC2395.

McAllen, TX August 25, 1997 A 15-month-old male electrocuted when he contacted the metal door plate of the mobile home of his parents. The metal plate was electrically charged from an extension cord that was worn and frayed. CPSC Case No. 981110HCC3049.

Pascagoula, MS July 12, 1997 A 5-month-old male electrocuted at his home when he came in contact with exposed wires in the cord of an alarm clock on the floor where he was playing. CPSC Case No. 981110HCC2055.

Sycamore Tnsp, OH November 5, 1997 A 74-year-old female electrocuted when she contacted bare wires while attempting to repair an electric lamp. CPSC Case No. 980817HCC2788.

Brownsville, TX June 3, 1997 A 15-month-old male electrocuted when he pulled an extension cord from a wall outlet in a bedroom. CPSC Case No. 980219CCC3606.

Newport Beach, CA July 15, 1997 A 35-year-old male electrocuted when he contacted a modified portable fan and plugged the fan into a receptacle in the bedroom of a home. CPSC Case No. 980202CCC3570.

Muskogee, OK August 16, 1997 A 9-month-old female electrocuted when she reached from a baby walker she was in and grabbed the exposed socket portion of a table lamp with no bulb in the socket. The lamp was laying on the floor of her home. CPSC Case No. 9709009CWE7048.

Barbourville, KY January 13, 1996 A 76-year-old male electrocuted when he contacted a broken aquarium heater while cleaning the fish-tank in his apartment. CPSC Case No. 960523CCC6231.

Millville, NJ July 7, 1996 A 5-year-old female electrocuted in the living room of the residence when she contacted an electric fan and the frame of a sliding glass door. CPSC Case No. 970423CCC1157.

Evansville, IN September 2, 1996 A 7-year-old female electrocuted when she contacted an electric fan and metal heat register in the doorway area between the living room and kitchen. CPSC Case No. 96093CCC7462.

Springfield, MO October 10, 1995 A 4-year-old male electrocuted when he contacted the blade of an attachment plug of a floor lamp partially inserted into a receptacle outlet located above a metal floor heating grate and behind a couch in the family room. CPSC Case No. 970220HCC7384.

The GFCI has been in service on selected circuits in homes and elsewhere for 30 years. Reductions in the number of electrocutions have occurred for receptacle outlets and equipment that are required by code to be provided with GFCI protection. The average cost of the GFCI device has decreased substantially since the early period, with the retail cost for a receptacle GFCI below $10. It is time to expand the scope of GFCI protected areas in dwellings to include all general-purpose receptacle outlets. This will provide the same level of electrocution protection as now provided at those receptacle locations that

were identified in the early years on the basis of priority. The unit cost of a GFCI is offset by the increased protection.

GFCIs manufactured to the current industry-supported safety standard (UL 943) are more reliable than those units manufactured in the past. UL 943 requires stringent voltage surge testing, improved resistance to corrosion, and resistance to false tripping from electronic interference.

With regard to boat hoists at dwelling premises, outlets that provide power for motor-operated boat hoist equipment should be provided with GFCI protection for personnel. In the 1980s, in cooperation with manufacturers of boat hoist equipment, CPSC staff identified motor-operated boat hoist equipment intended for use at residential settings as consumer products that needed GFCI protection to reduce the risk of electrocution when using this equipment while near bodies of water. This action was taken because there were a number of electrocutions with boat hoists in residential settings where the equipment did not have GFCI protection. Grounding provisions associated with fixed wiring cannot be relied upon alone for adequate electrocution protection for boat hoists. This is based on the fact that these installations are exposed to harsh weather conditions, the presence of moisture corrosive to the typical boat hoist metallic apparatus, and the presence of cords associated with the motor and motor control wiring harnesses commonly found on fixed wired electrically powered boat hoists. Including the requirement for GFCI protection for boat hoists at dwelling units harmonizes the *NEC* with accepted manufacturing practice and will reduce confusion and the chance that products without GFCI protection will enter service in the future.