



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: March 18, 2003

TO : Joseph Mohorovic, Special Assistant
Office of the Chairman

Jeffery Troutt, Special Assistant (Legal)
Office of the Chairman

John Horner, Director
Office of Congressional Relations

THROUGH: Patricia Semple, Executive Director

Jacqueline Elder, Acting Assistant Executive Director
Office of Hazard Identification and Reduction

Hugh McLaurin, Associate Executive Director
Directorate for Engineering Sciences

FROM : William H. King, Jr., Chief Engineer for Electrical & Fire Safety
Directorate for Engineering Sciences

SUBJECT : CPSC Staff Proposals for the *National Electrical Code*

Several months ago the engineering staff met with you to discuss staff's proposals to significantly upgrade the *National Electrical Code (NEC)*, the widely adopted model code, to provide greater protection for consumers from electrical fires and electrocution.

During the meeting, requests for additional information were made regarding the fire and electrocution data, and costs/benefits associated with the proposed code requirements. Attached are two internal memoranda recently prepared by the Directorate for Economic Analysis that discuss economic considerations for the proposals.

The proposals related to electrical *fire protection* seek to add Arc-Fault Circuit Interrupter (AFCI) devices to the existing branch circuits (one per branch circuit) in homes whenever the electrical panel is replaced. The engineering staff believes that AFCI technology will address 50% of the annual residential wiring fires that resulted in an average of 326 deaths, 1,481 injuries, and \$646 million in property losses over the 9 year period 1990-1998. With an estimate of 10 AFCI devices at a \$15-20 cost differential per device, the additional investment of \$150-

200 will reduce the risk of an electrical wiring fire by half. A more thorough explanation of costs and benefits for AFCIs is contained in the attached memorandum dated March 10, 2003.

The proposals related to *electrocution* seek to add additional Ground-Fault Circuit Interrupter (GFCI) protection for receptacle outlets accessible to consumers (one per branch circuit). CPSC figures show that over the 5-year period 1995-1999, an average of 196 electrocutions occurred each year that were related to consumer products. Some of these deaths occurred in locations prior to the electricity entering the building (such as with overhead power lines), and would not have been protected by GFCIs within the building. Also, some electrocutions occurred in older buildings in locations that have already been addressed with electrical code requirements for newer construction. However, CPSC technical staff estimates that 75-88 deaths could be prevented annually if GFCI protection were expanded to other circuits. With an expected average cost for adding GFCIs at \$50 per household, borne at installation, the benefits will continue over the lifetime of the GFCI and warrant the initial investment. A more thorough explanation of costs and benefits for adding GFCI protection is contained in the attached memorandum dated March 10, 2003.

The staff presented our proposals in person before the *NEC* Committee when it met in January 2003 to consider all proposed changes to the code. Committee balloting is currently underway. We will keep you and the other special assistants apprised of significant developments as the new, 2005 edition of the *NEC* takes shape. If we can provide any additional information or clarification of the above, please let us know.

Attachments

cc: Dennis Wilson, COMG
Pamela Weller, COTM
Michael Gougisha, COTM