

A Technical Bulletin from the NAMA Technical Services Department

Important Information Concerning New Electrical Requirements for Vending Machines

A series of injuries and deaths involving vending machines stretching over a fifteen year time frame caused the Consumer Product Safety Commission to focus on preventing any future incidents. Here is an example of one incident:

In 1995 a ten-year old boy was with his family on vacation. After swimming in the hotel pool the family returned to their room and changed into dry clothing. The boy then told his parents he was hungry and wanted something from the candy machine. The father gave the boy some change and the boy left to make a purchase. Later the boy was found lying in front of the candy machine, his arm touching the machine. The boy had been electrocuted. Apparently, he was reaching for a quarter that had fallen under one of the machines. After the incident, investigators said the grounding post on the power cord attachment plug of the machine implicated in the death of the boy was missing and the ground wire inside the wall receptacle was not connected allowing the cabinet to be live due to a ground-fault.

This tragic incident, along with others, caused the Consumer Product Safety Commission to recommend that ground fault circuit interrupters (GFCI) be installed on all vending machines as a requirement of the National Fire Protection Association's (NFPA) National Electrical Code (NEC). NAMA and the machine manufacturers worked with these groups to state the industry's concerns. Thirteen incidents have been reported in about a 15-year span. Although this type of incident is tragic and should not have happened it has been very rare, especially considering that there are 5 million machines on location across the U.S.

Regardless of this effort, with the publication of the 2005 National Electrical Code a new requirement was included affecting vending machine construction and installation. New clause 422.51 states that vending machines manufactured after January 1, 2005 shall include a ground-fault circuit-interrupter (GFCI) as a part of the power supply cord. Vending machines not incorporating GFCI protection shall be connected to a GFCI protected outlet.

Vending machines are constructed to either Underwriters Laboratories' (UL) Standard 541 for refrigerated machines or Standard 751 for non-refrigerated machines rather than the NEC. As of January 1, 2005 the UL standards had not been revised to include this new requirement. Therefore, no vending machines have been built with GFCI protection for operators to purchase. UL is in the process of revising both standards to include this requirement with an effective date for compliance of April 10, 2007. Between now and then vending machine manufacturers will be working with power supply cord manufacturers to obtain cords for their machines.

What should you do until then? You may be questioned by an electrical inspector about your machines when placing them in a new building that would require an electrical inspection. In that case, using the information in this bulletin, the inspector can be made aware that new vending machines with GFCI protected cords will not be available until early 2007.

Please note, even though the NEC says all vending machines shall have a GFCI we suggest, due to public health concerns, that machines holding potentially hazardous foods be monitored closely when plugged into a GFCI outlet.

If you have any questions concerning this Technical Bulletin please call the NAMA Technical Services Department at 312-346-0370.