Based on the EAC VVSG section 4 (Hardware Requirements), as available from the www.eac.gov website,
the following modifications are being proposed as a revision
based on the following standards and references:
- National Fire Protection Association (NFPA) 70, “National Electrical Code” (2002) Edition
- ANSI C84.1-1995 (R2005), “Electrical Power Systems and Equipment Voltage Rating (60 Hertz)”
- NIST Special Publication 811, “Guide for the Use of the International Systems of Units (SI)”

4.1.2.4 Electrical Supply
Components of voting systems that require an electrical supply shall meet the following requirements:
a. shall operate on standard alternating current (AC) circuits according to NFPA 70, “National Electrical Code”.
b. All voting machines shall also be capable of operating for a period of at least two (2) hours on backup power, such that no voting data is lost or corrupted nor normal operations interrupted. When backup power is exhausted the voting machine shall retain the contents of all memories intact

The backup power capability is not required to provide lighting of the voting area.

4.1.2.5 Electrical Power Disturbance
Vote scanning and counting equipment for paper-based voting systems, and all DRE voting equipment, shall be able to withstand, without disruption of normal operation or loss of data:
a. Voltage dip of 30% of nominal at 10 ms;
b. Voltage dip of 60% of nominal at 100 ms & 1 s
c. Voltage dip of >95% interrupt at 5 s
d. Surges of +-15% line variations of nominal line voltage
e. Electrical power increases of 7.5% and reductions of 12.5% of nominal specified power supply for a period of up to four (4) hours at each power level

4.1.2.6 Electrical Fast Transient
Vote scanning and counting equipment for paper-based systems, and all DRE equipment shall be able to withstand, without disruption of normal operation or loss of data, electrical fast transients of:
a. + 2 kV and - 2 kV on External Power lines (AC)
b. + 1 kV and - 1 kV on Input/Output lines(signal, data, and control lines) longer than 3 meters
c. Repetition Rate for all transient pulses will be 100 kHz

4.1.2.7 Lightning Surge
Voting scanning and counting equipment for paper-based systems, and all DRE equipment, shall be able to withstand, without disruption of normal operation or loss of data, surges of:
a. +- 2 kV AC line to line
b. +- 2 kV AC line to earth
e. +_ kV I/O sig/control > 30 m

4.1.2.8 Electrostatic Disruption
Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall be able to withstand +-15 kV air discharge and +- 8 kV contact discharge without damage or loss of data. The equipment may reset or have momentary interruption so long as normal operations is resumed without human intervention or loss of data. Loss of data means votes that have been completed and confirmed to the voter.

4.1.2.9 Electromagnetic Emissions
Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall comply with the Rules and Regulations of the Federal Communications Commission, Part 15; Class B requirements for both radiated and conducted emissions.

4.1.2.10 Electromagnetic Susceptibility
Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall be able to withstand an electromagnetic field of 10 V/m modulated by a 1 kHz 80% amplitude modulation (AM) over the frequency range of 80 MHz to 1000 MHz, without disruption of normal operation or loss of data.

4.1.2.11 Conducted RF Immunity
Vote scanning and counting equipment for paper-based, and all DRE equipment, shall be able to withstand without disruption of normal operation or loss of data, conducted RF energy of:

a. 10 V root mean square (rms) over the frequency range 150 kHz to 80 MHz with an 80% amplitude modulation with a 1 kHz sine wave AC & DC power
b. 10 V sig/control >3 m over the frequency range 150 kHz to 80 MHz with an 80% amplitude modulation with a 1 kHz sine wave

4.1.2.12 Magnetic Fields Immunity
Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall be able to withstand, without disruption of normal operation or loss of data, AC magnetic fields of 30 A/m at 60 Hz