



EAC Decision on Request for Interpretation 2008-06 (Battery Back Up for Central Count)

**2002 VVSS Volume I, Sections 3.2.2.4c, 3.2.2.5
2005 VVSG Volume I, Version 1.0, Sections 4.1.2.4c (Electrical
Supply), 4.1.2.5 (Electrical Power Disturbance)**

Date:

August 29, 2008

Question:

Given the size and power needs of a central count voting system and in light of the EAC's recent Request for Interpretation 2008-02 regarding a battery back up requirement, is a central count voting system required to have a battery back up?

Facts:

Both sections of the VSS and VVSG as well as the EAC interpretation imply that all voting systems require backup power, whether they are central count or precinct level systems. Prior to the EAC Decision on Request for Interpretation 2008-02, the requirement of 3.2.2.4c was being met by the jurisdiction ability to provide backup power and the voting systems being capable of operating for at least 2 hours on that backup power. The interpretation added the requirement to the manufactured voting systems that the backup power be battery backup. Central counts systems tend to be very large and can have very large power requirements, which could not be easily handled by a standard UPS unit.

Section of Standards or Guidelines:

3.2.2.4c/4.1.2.4c Electrical Supply

All voting machines shall also be capable of operating for a period of at least 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.

3.2.2.5/4.1.2.5 (Electrical Power Disturbance)

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:

- a. Surges of 30% dip @10 ms;
- b. Surges of 60% dip @100 ms & 1 sec
- c. Surges of >95% interrupt @5 sec;
- d. Surges of +15% line variations of nominal line voltage; and
- e. Electric power increases of 7.5% and reductions of 12.5% of nominal specified power supply for a period of up to four hours at each power level.

EAC Request for Interpretation 2008-02

Conclusion:

This conclusion is intended to amend the EAC's Request for Interpretation 2008-02 with regard to the battery backup requirement for central count optical scan systems.

Central count systems must meet the requirements of the electrical power disturbance standard whether or not that power source is the facilities main power source or backup power source.

However, a central count system cannot assume an uninterrupted transition to facility backup power or the availability of facility backup power at all. Central count systems are not required to have a 2 hour battery backup. A central count system shall provide for a graceful shutdown to allow switching to an alternate power source. The graceful shutdown shall meet the following requirements:

1. All ballots shall reside in either the input or output hopper with no ballots in process at the end of the shutdown process.
2. All ballots in the output hopper shall be fully read and saved.
3. A report, including the final state of all ballots, timestamps and of the final state of the unit, shall be printed or saved in a file. The report shall be part of the permanent election record and shall be available when power is restored to the system.
4. The system shall be capable of resuming operation from the point it stopped once power is restored.

Testing for the graceful shutdown shall maintain ballots in the input hopper through the shutdown process. The purpose of this requirement is to confirm that the system will stop processing further ballots, complete ballots in process and save a report that accurately identifies the final state of the ballots and the system. The second part of the test shall restore power to the system and confirm that the system restarts properly and that the status report reflects accurately the state of the ballots and the system.