NYVV

New Yorkers for Verified Voting

Response to the New York State Board of Elections
Proposed Draft of
Subtitle V of Title 9
of the Official Compilation of Codes, Rules and Regulations
of the State of New York
Part 6209 - Voting System Standards

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In developing voting system standards, it is useful to establish goals and operating principles at the start. This gives us a basis for determining whether or not the standards meet those goals and are consistent with those principles.

The following goals and principles must be utilized in developing New York State's Voting System Standards:

1. The New York Voting Systems Standards shall ensure that any voting systems certified by the State meet at least these standards:
   - comply with the requirements of the relevant New York State statutes.
   - comply with the requirements of the federal Help America Vote Act of 2002
   - comply with the 2002 FEC Voting System Standards
   - comply with the EAC's draft Voluntary Voting Systems Guidelines
   - are secure, accurate, reliable, maintainable, verifiable, and
   - provide an independent method for conducting audits and recounts of election results.

2. The Standards and the certification tests which they define, shall apply equally to all voting system vendors.

3. To the fullest extent possible, the standards shall apply equally to all voting technologies.

4. Although the manner in which certification tests are carried out may need to be adapted to the specific characteristics of each voting technology, the overall depth, rigor, extent, and coverage (i.e., fraction of the total number of units examined) of these certification tests shall be comparable for all voting technologies.

5. The conduct of the certification tests shall be open and transparent to the public and the results of those tests shall be made readily available to the public.

NEEDED IMPROVEMENTS TO THE DRAFT VOTING SYSTEM STANDARDS

The proposed amendments to Subtitle V of Title 9 of the Official Compilation of Codes, Rules and Regulations of the State of New York by the New York State Board of Elections (referred to in this document as the Draft Standards) require significant revision if they are to meet the goals and principles set out above.

Details are provided in commentary for individual sections of the Draft Standards. There are many weaknesses in the Draft Standards and much improvement will be needed if we are to meet these goals. Final Voting System Standards must at a minimum:

- Provide precise and specific definitions and descriptions.

- Require that voting systems and the procedures, tests and requirements used to evaluate them be subject to full independent evaluation and must not be vendor defined and vendor-managed.

- Not allow any tests in whole or in part to be "waived" at the State Board's discretion.

- Comply with the Election Assistance Commission's 2005 Voluntary Voting System Guidelines and the 2002 FEC Voting System Standards.

- Not allow networked connections to any devices inside or outside of the polling place. Voting systems may not be connected to any form of modem-based, wired, or wireless network at any time.

- Consolidate separate sections on DREs and paper ballot based systems.

- Make requirements for all types of systems be equally rigorous and comprehensive.

- Require comprehensive security testing and evaluations, including but not limited to red team exercises.
- Prohibit automated testing via diagnostic cartridges and software. Such tests do not test the parts of the system which voters and poll workers interact with on election day.
- Require that voting system Acceptance Testing include simulated "mock elections", using maximum anticipated numbers of voters and votes, and a complete audit including inspection of the audit logs and other print outs from the system.
- Have source code requirements modeled on North Carolina's Public Confidence in Elections law (Appendix A).
- Require that vendors who submit a voting system for certification must submit both DRE and optical scan systems at the same time if both are available from the vendor.
- Require that all written procedures used to conduct testing, the tests themselves, and the results of such testing must be fully and readily available and open to the public.
- Recognize that the voters are the primary stakeholders in elections, and require a fully visible and transparent process.

DOCUMENT LAYOUT

In order to facilitate easy reference to the original text of the Draft Standards, the full text has been included here. Comments specific to an item or paragraph are below the original text. There is a brief overview at the beginning of each Section.

To distinguish original text from commentary, the following format conventions are used:

`Draft Standards Original Text is formatted like this`

- Commentary is formatted like this

Section 6209.1 Definitions

General comments about this section:

This section would be more useful (i.e., definitions would be easier to find) if they were arranged in alphabetical order.

There are a significant number of key terms which ought to be defined in this section but which are not. For example, there is no definition of a ballot marking device. Finally, crucial undefined terms used later in the Draft Standards must be defined here.

Section 6209.1 Definitions Comments

The terms used in this part shall have the significance herein defined unless another meaning is clearly apparent in language or content.

   1. Acceptance test means a test conducted by the county board of elections and the State Board of Elections, to demonstrate that the voting system software as delivered and installed in the user's environment, meets all of its functional requirements.

- Replace "voting system software" with "voting system hardware and software"

   2. Auxiliary components means any device, materials or equipment which is used to give assistance or aid to the actual voting device but is not a permanent or enclosed part of the voting device.

   3. Ballot layout means the positioning of all political party names and emblems, and names and emblems of all independent bodies, office titles, ballot proposals, and candidate names, in accordance with the requirements of the Election Law as to order and rotation.

   4. DRE means a direct recording electronic voting system which records votes by means of ballot display provided with mechanical or electro-optical components which are activated by the voter. Styles include ballot overlay and touch-screen machines.

- This only includes "ballot overlay" (e.g., Danaher) and "touch-screen machines" (e.g., Diebold AccuVote, ES&S iVotronic, etc.) but fails to include non-touch-screen DREs, such as the Hart Intercivic eSlate.

   5. Precinct-based optical scan is a voting system which uses optical-scan technology and enables voters to cast paper ballots at their respective polling places.

- This definition fails to specify either the essential requirement (i.e., in-precinct scanning) that differentiates such systems from central-count optical scan systems, or the key objective (i.e., over-vote protection / "second-chance" voting) of such systems. This definition could even be met by a central-count optical scan system."

- This definition should be re-written as follows:

  "*Precinct-based optical scan: a voting system using optical-scan technology in which:
  a) the optical scan paper ballots completed by voters at their respective precincts are scanned and counted by an optical ballot scanner located in the precinct in which those ballots have been cast.
  b) the in-precinct ballot scanner provides for "second chance voting" by providing voters the option of retrieving their ballot from the scanner (prior to it being counted) if that ballot contains any contests that are over-voted or under-voted, so that that the voter can correct the ballot and resubmit it".*

   6. Election Management Software (EMS) means the software used by the system to execute the layout of the ballots.

7. **Encrypted copy** means a scrambling of the programming code in which only the manufacturer of the program may determine the sequence of such code.

8. **Escrow account** means a third party who shall be approved by the State Board for the purpose of taking custody of all materials required to be put in escrow by statute.

9. **Log of maintenance performance** means a written and/or electronic record which contains all information relating to performance of scheduled and non-scheduled maintenance requirements recommended by the vendor or manufacturer of such equipment and all service visits performed by vendor or manufacturer.

10. **Modification** means any change in either software, firmware or hardware that directly affects the operation of the voting system that will require re-examination of certified equipment by the State Board.

- This definition is ambiguous and circular. It is saying that only some modifications that affect the operation of the voting system will require a re-examination and that others will not. And only those that do trigger such a re-examination will be deemed a "Modification".

  Because Modifications frequently cause unexpected effects, ANY modification to software must require re-examination "Modification" should be defined in this way:

  "*Modification means any change in either software, firmware, or hardware that directly affects the operation of the voting system. Any modification will require a re-examination of certified equipment by the State Board.*"

11. **Operational manual** means (1) a manual of all procedures used to prepare the equipment and provide proper maintenance procedures including the unpacking and storage procedures to be utilized by county boards of elections personnel and (2) a manual of election day setup and election day operating procedures to be utilized by the inspectors.

12. **Pre-qualification test** means a predetermined set of votes and vote totals prepared by the State Board. Such votes shall be entered upon the voting equipment and the results of the casting of said votes shall be compared to the predetermined results of the test.

- Any test needs to require the votes to be entered in the same manner as they are during an election. This means manual entry using all pushbutton and/or touchscreen interfaces, use of all devices to be used by voters with and without disabilities, and use of all languages intended for voters with minority languages.

13. **Printout** means the printed copy of (1) zero totals, candidate names and offices and other information produced by the voting equipment prior to the official opening of the polls and (2) the votes cast for each candidate and question, the names of candidates and the offices for each candidate and other information provided after the official closing of the polls.

- This is not a useful definition because it defines two separate meanings. This should be split into two separate definitions, e.g., "Zero Printout (pre-opening)" and "Tally Printout (post-closing)".

14. **Hardware** means the actual voting or ballot counting device.

15. **Software** means any and all codes for the operation of the vote counting system.

- This definition is inconsistent with the preceding definition for Hardware. "Software" is restricted to include only those "*codes*" pertaining to the operation of the "vote *counting* system"? It must also pertain to vote recording, and any other functions performed by compiled source code.

- A better version of the above definition is "*any and all codes for the operation of the voting system.*" But this is not sufficient either.

- Since most software operates in conjunction with numerous data files which affect and control the operation of the software, all data file components in voting systems must also be considered part of the software for purposes of inspection and evaluation. This includes all

data files, runtime libraries, device drivers, and other non-hardware parts of the voting system which affect the operation of software of the voting system.

This definition of software must be expanded to include these additional non-hardware components.

16. Firmware means computer program stored in read-only memory devices embedded in the system and not capable of being altered during system operation.

- This definition depends on the meaning of "*system operation*" which is not defined.

17. Resident vote tabulation programming means the manufacturer's internal firmware program which shall permanently reside on the voting system's central processing unit, registering, accumulating, and storing votes and ballot images.

- This definition is flawed. Firmware does not "*permanently reside on the voting system's central processing unit*". Programming code consists of individual instructions, each of which is executed by a Central Processing Unit, but code does not reside on or in a Central Processing Unit, but rather in some form of system memory.

- There is nothing that precludes a voting system from having more than one Central Processing Unit as implied here.

17a. Resident memory means the internal memory of the voting system that stores election results and ballot images.

18. Source code means the assembly language statements or high level language used to program the electronic equipment or vote tabulating system.

- Typo. Need to insert "statements" between "*high level language*" and "*used*".

- Should say "*voting system*" not "*vote tabulating system*".

19. Specific environmental conditions mean and shall include the effect of natural environmental conditions such as: temperature, humidity, dust and induced environmental conditions such as handling, storage or transportation which many affect the operation of the equipment.

20. State Board means the New York State Board of Elections.

21. Testing laboratory means a certified private or public laboratory used to perform tests on the voting systems and related equipment.

22. Vendor shall include any manufacturer, company or individual who seeks to sell voting systems in New York State.

23. Voting position means an area or square on the voting equipment used to place the candidate's name, office or political party or independent body designation, or the placement of ballot amendments and propositions.

24. Voting system means any electronic or computerized voting equipment and any ancillary equipment supporting such system.

- This definition fails when applied to optical scan paper ballot voting systems, because it only includes "*equipment*" as part of the voting system. Paper ballots are clearly an important component of an optical scan paper ballot system, but they do not constitute "*equipment*".

The definition should be expanded to specifically include paper ballot based systems.

25. VVPAT means a voter verifiable paper audit trail.

- This only decodes the acronym without providing any further meaning. A more complete definition would be:

"*VVPAT means a voter verifiable paper audit trail, i.e., a contemporaneous paper record of a voter's selections that is presented by the voting system to the voter for verification prior to the voter's vote being cast and which is securely retained by the voting system as the official*

26. Tactile discernible controls means a voting feature which allows persons with limited reach and/or hand dexterity, the ability to cast their vote.

- Tactile discernible controls are designed for disabled voters who are either blind or visually impaired. They are virtually useless for disabled voters who have limited reach and/or hand dexterity -- those voters typically require dual-switch devices (e.g., sip-and-puff switches, foot pedal switches, jelly switches, etc.). This definition could be improved to read:

  "Tactile discernible controls means controls which can be distinguished solely through the sense of touch and that when used with an audio voting feature enable voters who are blind or visually-impaired the ability to cast their vote."

27. Audio voting feature means a device that allows blind or visually-impaired persons, or persons with limited reach and/or hand dexterity, the ability to cast their vote.

- This is a feature for voters who either difficultly seeing or reading, not for those with manual dexterity impairments. This definition could be improved to read:

  "Audio voting feature means a device that when used in conjunction with tactile discernible controls enables voters who are blind or visually-impaired the ability to cast their vote, or which enables voters who can see but read the ability to vote."

28. Sip and puff voting attachment means a device operated by pneumatic switch which allows persons with certain disabilities the ability to cast their vote.

- This definition should make clear that a sip-and-puff voting attachment is a specific instance of a broader class, namely, "*dual-switch voting attachments*", which includes sip-and-puff switches, foot pedal switches, and jelly switches. All of these dual-switch voting attachments are designed to enable persons with limited reach and/or hand dexterity the ability to cast their vote.

29. Election Assistance Commission is the commission established by Help America Vote Act of 2002, which serves as a national clearinghouse of information and reviews of procedures with respect to the administration of federal elections.

30. Paper-based Ballot Counting Equipment means any electronic or computerized ballot counting system or equipment which tabulates and reports votes cast on all paper ballots.

- There are other types of equipment and methods of counting ballots which must be permitted under this definition. In order to include them, this definition must be expanded to include non-electronic counting methods.

31. Certification Test Desk means a pre-audited group of ballots marked with a predetermined number of votes cast for each candidate, write-in position and each voting option which appears on the ballot.

Section 6209.2 Polling Place Voting System Requirements

Among other items noted in the detailed text below, this or the equivalent section of the Final Voting System Standards must contain specific requirements for:

- Minimum compliance with *EAC's 2005 Voluntary Voting System Guidelines (Volume 1 Voting System Performance Guidelines, December 13, 2005)* and the 2002 FEC Voting System Standards.
- Prohibiting automated testing of voting systems, and requiring full manual testing.

- All voting system components must provide tamper evident sealing of all I/O ports, disk drives, memory or other cards.
- Banning networked connections to any devices inside or outside of the polling place. Voting systems within a polling site may not be connected to any form of modem-based, wired, or wireless network at any time.

Section 6209. 2 Polling Place Voting System Requirements Comments

A. In order for a polling place voting system to be considered by the State Board for certification, it must comply with the mandates of New York State Election Law, and the Election Assistance Commission's Voting System Guidelines, and meet the following requirements:

- The Election Assistance Commission's Voting System Guidelines are voluntary, but they should be used as a minimum standard for New York State. The EAC's final version will not be available until 2007, after any new equipment acquired by New York will have been purchased. It is imperative that the New York State regulations comply with or exceed the federal guidelines when they become effective so that expensive upgrades or repurchase is not required.

- In order to do this, Section 6909.2 must require, at a minimum, compliance with:

    1. 2002 FEC Voting System Standards

    2. EAC's 2005 Voluntary Voting System Guidelines – Volume 1 Voting System Performance Guidelines, December 13, 2005.

    (1) Provide a full ballot display on a single surface.

    (2) Provide a device which produces and retains a voter-verifiable permanent paper record, pursuant to statute, which the voter can review and/or correct prior to the casting of their vote.

- The ballot marked by the voter is the voter-verifiable permanent paper record when using Optical Scan systems. The language "provide a device" implies that only some type of electronic device can provide this.

- Should say review and/or CHANGE.

    (3) Provide a device or means by which the votes cast on the machine can be printed or recorded or visually reviewed after the polls are closed.

- This paragraph seems to be referring to the cumulative totals at the end of the day rather than individual ballots. If so, it must explicitly state that. A better phrase would be "which the cumulative totals can be…" rather than the current "which the votes cast…".

- If the intention of the phrase the "votes cast" means individual ballots must be reviewed, then it must be explicit that ballots marked by voters are the means by which votes cast on the machine can be reviewed when using optical scanners.

    (4) Provide a battery power source in the event that the electric supply used to make the voting system equipment function if disrupted. Such batteries must be rechargeable and have minimum five-year life when used under normal conditions.

- Typo, "if disrupted" should be "is disrupted"

- Typo "have a minimum"

- No specification is provided as to the period of time over which the equipment must continue to function on battery power in the absence of utility power, nor to the level of continued operation to be maintained (i.e., must the system only retain previously cast votes while on battery power, or must it also enable voting to continue in the absence of utility power)?

- The paragraph does not establish any requirement as to whether or not replacement batteries can be swapped in during an extended power outage without resulting in a loss of previously-recorded votes and without disrupting the voting process. Nor does it indicate how frequently the batteries need to be re-connected to utility power while the equipment is in storage between elections so as to prevent premature battery failure.

(5) The system shall contain software and hardware required to perform a diagnostic test of system status, and a means of simulating the random selection of candidates and casting of ballots in quantities sufficient to demonstrate that the system is fully operational and that all voting positions are operable.

- Paragraph 5 allows automated testing of voting systems using software and data residing on diagnostic cartridges. Automated testing of voting systems is incomplete testing, and cannot be allowed. Software cannot simulate votes manually entered by voter, which require touch pressure on the touch screen or pushbuttons, use of accessible devices, use of the printer, and viewing of the ballot in minority languages.

- How does a having a "*means of simulating the random selection of candidates*" demonstrate that the system is fully operational and that all voting positions are operable? If the selections are simulated (e.g., by installation of a diagnostic cartridge), that simulation fails to demonstrate that the normal method of selection (e.g., touch screen sensors) is properly calibrated and functioning correctly, because such simulated inputs bypass those sensors. And if the simulated inputs are indeed generated at random, how does this demonstrate that the machine is correctly registering and counting votes if the exact sequence of simulated inputs is not known, as would be the case if the diagnostic input is indeed generated at random?

- Being "*fully operational*" also requires a person to extract the memory cartridge which is supposed to contain the votes and tallies at the end of the election day, and confirm that it contains accurate tallies and an accurate record of the votes cast. The only way to "*demonstrate that the system is fully operational and that all voting positions are operable*" is to have humans interact directly with the device. DRE voting systems must have votes entered manually using all different input mechanisms. Optical scanners must have test decks of marked ballots inserted into the scanner.

(6) The system shall be designed to protect against dust and moisture during storage and transportation.

- Paragraph A as written does not go far enough and must also contain specific requirements for:

    1. All voting system components must provide tamper evident sealing of all I/O ports, disk drives, memory cards and other physical connection points.
    A new paragraph (7) must be inserted here stating this requirement.

    2. No networked connections of any kind to any devices inside or outside of the polling site can be allowed. A paragraph is required specifically stating that voting systems within a polling site MAY NOT BE LINKED to any form of dial-up or modem connection, or wired and/or wireless local or wide area network at any time.
    A new paragraph (8) must be inserted here stating this requirement.

B. In addition to the requirements of subdivision (a) of this section, fully-accessible voting equipment certified by the State Board shall meet the following requirements for usability by voters who are disabled:

- Subdivision (a) should be marked subdivision A.

- What about the ability to meet the needs of voters who are deaf or hearing-impaired (and thus unable to use the audio interface) but who are also visually-impaired but not blind? Specifically, such systems should provide the ability to:

1. Magnify/enlarge fonts for those with limited or impaired vision;

2. Change foreground and background colors to accommodate color blindness,

3. Enhance contrast through reverse video.

     (1) The equipment shall be equipped with a voting device with tactile discernable controls, pursuant to statute.

     (2) Equipment shall be equipped with an audio voting feature, pursuant to statute.

     (3) Equipment must be capable of being equipped with voting device of a sip and puff technology nature, pursuant to statute.

- Typo, "equipped with a"

- This provision needs to be more general, requiring support for dual-switch input devices in general (e.g., sip-and-puff switches, foot-pedal switches, jelly switches, etc.) rather than only sip-and-puff switches. For illustrations of such dual-switch input devices, see: http://www.verifiedvotingfoundation.org/downloads/20050816.accesscharts.all.pdf

C. Standards for noise level

     (1) Voting equipment to be certified by the State Board shall be constructed in a manner so that noise levels of the equipment during operation will not interfere with the duties of the election inspectors or the voting public.

     (2) The noise level of write-in components of the equipment shall be so minimal that it will be virtually impossible under normal conditions for someone at the table used by the inspectors of elections to determine that a write-in vote is being cast or has been cast.

- This describes a seemingly unusual problem, that voting equipment makes a noise when someone is entering a write-in. However, since a DRE typically uses a keyboard for entering of write in votes, and for no other function, would the clicking of the keys be considered audible evidence that the voter is casting a write-in vote? The language in the Draft Standards suggests that it would.

D. Standards for curtain design

     (1) Voting equipment curtains shall be constructed so that no one within the polling site will be able to see how a voter is casting a vote.

- Since the term "no one within the polling place" implicitly includes the voter using the equipment, this requirement could make it extremely difficult for voters to verify their votes.

- This should be changed to read "no one within the polling place other than the voter will be able to see how a voter is casting a vote".

     (2) Curtains shall be so designed as to allow any voter, either electronically or manually, to open and close the curtain with ease when entering and exiting the equipment without obstruction.

E. Environmental Standards
     Voting systems shall be capable of withstanding reasonable levels of exposure to dust, rain and humidity during storage, transport and use.

- Voting systems must not only withstanding environmental conditions during storage, but must also withstand "reasonable levels of exposure" to environmental hazards during operation, including, but not limited to:

1. Electrostatic discharge (ESD) in conditions of low-humidity,

2. Condensation in conditions of high-humidity, etc.

3. Components of the voting system which voters touch (e.g., touch screens) must be able to withstand various contaminants (oils, grease, foodstuffs) that voters might have on their hands and which they might in turn deposit onto such surfaces.

4. Those surfaces must also be able to withstand any cleaners or solvents needed to remove such contaminants.

Section 6209.3 Paper-based Voting Systems

As written in the Draft Standards Section 6209.3 places higher requirements on paper ballot based scanner systems than equivalent sections do for DREs. This section's functional requirements must be applied to DRE systems also.

In addition, some of the draft requirements in this section are of questionable usefulness and are inappropriate for paper-based voting systems.

The Final Standards should consolidate the sections on DREs and paper ballot based systems, and that make all requirements be equally rigorous for all types of systems.

Section 6209.3 Paper-based Voting Systems Comments

A. In addition to voting system requirements provided for elsewhere in these rules and regulations, paper-based systems must
(1) mechanically or electronically prevent a voter from voting for candidates or ballot proposals for whom or which he or she is not entitled to vote.

• This paragraph requires paper-based voting systems to do this "*mechanically or electronically.*" But such a requirement is not appropriate for paper ballot systems because the poll worker or Board of Elections simply gives the voter the correct ballot. This more of a procedural issue enforced by poll workers rather than a feature provided by the voting technology, i.e., this a matter of whether or not poll workers present the voter with the correct ballot of the party for which the voter is registered.

• This same procedural issue pertains to DRE voting machines, which rely on poll workers presenting the voter with a "Smartcard" (or other similar device) that correctly encodes the proper ballot for the voter's party.

• With paper ballot systems, however, the poll worker simply gives the voter the correct paper ballot with the races for the voter's party. Accordingly, the placement of this requirement under this section is inappropriate.

(2) be able to prevent a voter from
(a) Over-voting
(b) Voting for the same person more than once for the same office or position
(c) Voting for candidates of another party in a primary election

• Item (c) again implies that the voting system must do this mechanically. But as noted above, with optical scanner systems, the voter receives the correct primary ballot from a poll worker. While relevant to DREs, this is a procedural issue not relevant to paper based voting systems, which this section is attempting to address.

B. The system may not count any votes for an office or ballot proposal which has been over-voted or otherwise improperly voted.

• "*over-voting*" is not defined in §6209.1 (Definitions), nor is there a definition of what it means for any votes to be "*otherwise improperly voted*". The definition of what constitutes an over-vote is particularly important as it pertains to optical scan paper ballots or other forms of paper ballots. In fact, the definition of over-vote essentially would have determined the outcome of the 2000 Presidential election in Florida had a full-recount of ALL ballots cast been permitted by the courts.

- Specifically, how do you handle the case of a voter who fills in the oval for "George Washington" and also fills in the oval for "Write-In Candidate", and then writes in "George Washington"? Such a ballot shows a clear and totally unambiguous intention on the part of the voter to cast a vote for George Washington. But, depending on how "over-voting" is defined, such a vote might not be counted (because more than one "selection" was marked in a race where only a single "selection" is permitted), despite the fact that the intent of the voter is absolutely clear and that the voter is not indicating an intention to cast a vote for a greater number of candidates than which he or she is lawfully entitled to vote.

- With respect to the definition of "*otherwise improperly voted*", the standards need to be made more explicit, and in any case, the ultimate goal should be that the clear intent of the voter is respected by ensuring that all votes in which that intent can clearly be discerned are counted.

C. An over-vote in one or more office or ballot proposals shall not prevent the counting of all other offices or ballot proposals contained on the ballot.

D. In the case of candidates who appear on one or more party lines, the system must be capable of correctly counting the vote according to provisions of Election Law S 9-112. The system may not count votes

- The second part of this subsection is an incomplete sentence: "*The system may not count votes…*"

E. In vote counting, the system shall ignore any mark on a ballot unless that mark is in a:
          (1) voting position for a candidate whose name is on the ballot;
          (2) voting position designated for write-in voting for a write-in candidate; or
          (3) voting position for a ballot proposal.

F. The system shall provide a method for write-in voting and shall report the number of votes cast in each contest in write-in voting positions.

G. The system shall provide a means by which the software may be positively verified to insure that it corresponds to the format of the ballot face.

- "*insure*" should be "*ensure*"

- Paragraph G. is unclear. Must the software be able to report the lot number of the ballot face? Or must the software be able to self-test that the ballot face is correctly programmed? If the latter, correctness must be tested by people, not by automated testing cartridges or software.

- Makes reference to "*software*", but it is unclear what software is being referred to. This item needs to be re-written to improve its clarity.

H. The system shall be capable of accumulating and reporting a count of the number of ballots tallied for an election district and shall be capable of separating and tabulating those election district totals to produce a report of the total of ballots tallied by groups of election districts such as legislative districts, wards, etc.

- It should be easily possible to produce tallies of ballots per election district and various legislative districts if the system knows these districts. The voter's election district would have to be noted on the ballot for Optical Scan systems, and on the smart card for DREs.

 I. The system shall be capable of accumulating and reporting by election district the total votes cast for each candidate and the total vote for or against each ballot proposal. The system shall also be capable of tabulating and reporting the vote cast for each candidate and the vote cast for or against each ballot question by groups of election districts such as legislative districts, wards, etc.

- Item I, as written, could effectively eliminate any existing optical scanner from being able to comply with these standards. Scanner systems of course allow write in votes, and ballots with write in votes are routed to a special compartment in the attached ballot box. The scanners do not themselves read the names of the write in candidates. This must be done after the election by poll workers who remove the write in ballots from the special compartment after the close of the

election, and then tabulate the votes by hand. This paragraph must be rephrased to explicitly allow this method of write in vote tabulation.

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J. Qualification tests for paper-based voting systems shall not be required for the following
types of equipment, and their suitability for elections use shall be determined by functional
tests which integrate them with the remainder of the system:
        (1) Standard production models of general purpose data processing equipment
(PC'S, printers, etc.) shown to be compatible with these requirements and with the paper
ballot voting system.
        (2) Production models of special purpose data processing equipment (scanners, bar
code readers, etc.) having successfully performed in elections use and having been shown
to be compatible with the paper ballot voting system.
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• This paragraph is too vague, and does not specify what entities perform the "*functional tests*", nor does it identify who determines whether a specific instance of "*special purpose data processing equipment*" has or has not "*successfully performed in elections use*".

• This item grants an exemption from qualification testing to a broad range of equipment without providing any objectively-enforceable standards for determining which equipment qualifies for such exemption.

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K. Ballot specifications:
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• Item K makes no mention of alternative language ballots or whether such ballots need to be bilingual so as to enable counting along with English-language ballots.

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        (1) All ballots shall meet the specifications as to form and content required under
section 7-122 of the Election Law.
        (2) Ballots shall be printed in black ink on white paper or on paper stock of
different colors to identify different types of ballots (i.e., emergency, affidavit, etc) or
in the case of a primary, to identify ballots for each political party according to the color
assigned to such party pursuant to law.
        (3) Coding which is both machine readable and manually readable shall be used to
identify different ballot styles.
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• All machine readable coding must also be human-readable, to ensure that the machine readable coding does not contain improper information. This paragraph must specify that the ballots must be human readable as well. This could be accomplished by substituting the phrase "*human readable*" for "*manually readable*".

```
        (4) Ballots used in the system shall be able to be counted by hand as well as be
counted by machine. The system shall provide an audit trail of all ballots cast, making
possible the reconstruction of the election, starting with the individual votes of all
eligible voters, in the case of a recount.
```

• When using optical scanner systems the "audit trail" consists of the original paper ballots marked by voters. It is unclear what is meant by "reconstruction of the election." This is one of the primary advantages of scanner systems, and this requirement should be applied equally to the voter-verifiable paper audit trail records produced by DRE voting machines.

```
        (5) The types of ballots used and their form, type size and arrangement must be
approved by the State Board of Elections.
```

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L. Where a paper-based system is used for the central counting of absentee, affidavit,
emergency and special ballots, the requirements of 6209.2 do not apply.
```

• Item L should also specify military ballots along with "absentee, affidavit, emergency and special ballots".

Section 6209.4 Application Process

Among other items noted in the detailed text below, this or the equivalent section of the Final Voting System Standards must contain specific requirements for:

- Voting systems must first be certified to the most current federal certification standards(a NASED/EAC 2002 certification number at the time of this writing) before an application for NYS certification is filed.
- Any vendor that submits a voting system to be certified must submit both DRE and optical scan systems at the same time if both are available from the vendor.
- Pre qualification tests cannot be performed by diagnostic cartridges or software. Tests must be performed for all the same interfaces as would be used by actual voters (e.g., touch screen inputs or via alternative, accessible inputs, such as tactile-discernible keypads, sip-and-puff switches, etc.).

Section 6209. 4 Application Process Comments

- This section contains no requirement that a voting system must first complete federal certification (i.e., ITA testing and issuance of a NASED/EAC 2002 certification number) before an application for NYS certification is filed. New York State should not waste resources on attempting to qualify a system that has not yet received federal certification.

- This section must require that any vendor that submits a voting system to be certified must submit both DRE and optical scan systems if both are available from the vendor. Further, it must specify that submission of both DRE and optical scan systems must occur AT THE SAME TIME.

   A. The Election Operations Unit shall forward an application form, upon request, to any vendor, together with a copy of applicable rules and regulations and a pre-qualification test format for both a general and primary election ballot program.

   B. Said vendor shall return completed ballot layouts based upon the pre-qualification test format to the Election Operations Unit. Upon approval of the layouts, the vendor shall program such equipment and complete the pre-qualification tests for both ballot programs provided, and enter the simulated votes upon said equipment for each election program.

- There is no specification as to how the vendor enters the simulated votes upon the equipment. In the case of conducting the pre-qualification tests on DRE voting machines, vendors must be required to enter the simulated votes using all of the same interfaces as would be used by actual voters (e.g., touch screen inputs or via alternative, accessible inputs, such as tactile-discernible keypads, sip-and-puff switches, etc.), rather than injecting them directly into the device via any type of diagnostic input cartridge.

   C. The completed application shall be returned, with a printout of tabulated votes from the primary and general election pre-qualification tests as cast on the voting system equipment which the applicant requests to have certified. The pre-qualification test programs shall be retained by the applicant for use in the certification process.

   D. The application and printouts shall be reviewed to determine if the voting system shall be considered for certification and the applicant shall be notified of such determination.

- The response to the vendor must occur within a specified maximum number of days.

   E. No application shall be deemed to be filed until all documentation required by these rules has been submitted to the State Board or its designee.

   F. A certified or bank check in the amount of $5,000 shall accompany such application, and be applied towards the actual cost of examination.

   G. Fees for the examination of a voting system shall be assessed against the vendor by the State Board based upon the cost to the State Board for examination of such voting system by an outside contractor, laboratory or other authorized examiner, but the fees assessed shall not exceed the amount permitted by statute.

Section 6209.5 Submission of Voting Systems Equipment

No comments on Section 6209.5.

Section 6209.5 Submission of Voting Systems Equipment Comments

A. Voting systems considered for certification by the State Board shall be delivered to the State Board or its designee. Such equipment shall include auxiliary components and equipment used to program ballot layout, and any other additional equipment used in the operation of said voting system.

B. If the voting systems equipment is certified by the State Board, the specific equipment and components examined by the State Board shall become the property of the State Board for as long as the equipment is in use in the State or for such shorter period as the State Board shall so determine. Voting systems not certified shall be disposed of pursuant to the vendor's direction.

C. The applicant shall provide service and normal maintenance of said equipment after certification and shall supply to the State Board, at no cost, any modification to the equipment for upgrading of any feature during the period that said equipment is offered for sale and use in the State.

Section 6209.6 Examination Criteria

Among other items noted in the detailed text below, this or the equivalent section of the Final Voting System Standards must contain specific requirements for:

- Procedures and tests must not be vendor-managed but based rather on a fully independent evaluation of the system.
- The State Board must not be allowed to "waive" any all testing at its discretion.
- There must be a requirement for minimum compliance with current federal standards.
- Prohibiting certification of voting systems which have not been independently tested.
- Requirements that written procedures used to conduct testing, the tests themselves, and the results of such testing must be readily available to the public.
- There must be a requirement that the results of the Functional Configuration Audit, the Physical Configuration Audit, and a Security Audit (not referred to in the Draft Standards) must be made available to the public.
- Prohibit automated testing, as such tests do not test the parts of the system which voters and poll workers interact with on election day.
- Model source code requirements on North Carolina's Public Confidence in Elections law (see Appendix A).

Section 6209.6 Examination Criteria Comments

A. The State Board or its designee, as part of its examination, may at its discretion, submit the voting system for a laboratory analysis.

- Vague and ill defined. This paragraph should be eliminated.
- As noted in Section 6209.2 (*Polling Place Voting System Requirements*), the Final Standards must at a minimum meet current Federal Standards:
  1. Compliance with the EAC's 2005 Voluntary Voting System Guidelines, and
  2. 2002 NASED/FEC Voting System Standards

B. The State Board may, at its discretion, waive any part of, or all of, the analysis and test requirements contained in subdivision (e), upon submission by the vendor of certified test data and reports which verify system performance in a manner equivalent to the Board's examination requirements.

- ANALYSIS AND TEST REQUIREMENTS MUST NOT BE WAIVED UNDER ANY CIRCUMSTANCES! The ability to waive these requirements makes them meaningless. This paragraph must be removed in the Final Standards.

- This paragraph is vague and unspecific:

  1. The reference to "*the analysis and test requirements contained subdivision (e)*" is unclear, since the text of subdivision (e) does not appear to enumerate an "*analysis and test requirements*".

  2. There is no specification as to which entity would certify "*certified test data and reports which verify system performance*".

> C. All laboratory testing shall be conducted or verified by independent testing authorities accredited by the EAC. Testing shall be performed in conformity with written procedures adopted by the State Board and such procedures shall be available for public inspection.

- All written procedures used to conduct the laboratory testing must be available for public inspection. The results of such testing must also be fully available to the public.

- Procedures must be publicly posted on the State Board web site as soon as they are adopted and/or available.

- The public must have access to these public records at the same time as other parties such as vendors and testing laboratories.

- It must be clearly stipulated that there be no special process in order for the public to inspect these procedures and results.

- This item specifies that qualification "shall also include a Functional Configuration Audit and a Physical Configuration Audit. It must also include a Security Audit.

> 1. Software and Hardware Qualification Tests
>
> Qualification of voting system software and hardware shall consist of a series of tests, code analyses, and inspection tests performed at the federal level, to verify that the software and hardware meet design requirements and that characteristics are correctly described in the documentation items. Qualification shall also include a Functional Configuration Audit and a Physical Configuration Audit.

- This states that EAC-accredited labs will determine whether the vendor's "*design requirements*" are met, and system characteristics correctly documented. That allows the certification of voting systems which have not been independently tested.

- Should state *"shall consist of a series of tests, code analyses, and inspection tests performed at the federal **and state Levels**."*

> A. Functional Configuration Audit
> A functional configuration audit shall be performed to verify that the software complies with the Software Specification. Vendor test data may be used in partial fulfillment of this requirement; however, the State Board or its designee shall perform or supervise the performance of additional tests, or order additional laboratory testing, to verify nominal system performance in all operating modes and to validate, on a sampling basis, the vendor's test data reports. The Functional Configuration Audit shall be performed in a facility selected by the State Board.

- This item references a "*Software Specification*", but that term is not defined in section 6209.1 (Definitions). While it is defined in §6209.6(C)(2)(B)(1), that constitutes a forward reference and should be noted as such.

This item further describes that additional tests (or laboratory testing) be performed to verify "*nominal system performance in all operating modes*". This is insufficiently clear. In this context, "all operating modes" should include all disability access modes and foreign-language modes.

- This item states that these additional tests are to validate, "*on a sampling basis*", the vendor's test data reports. The phrase "*on a sampling basis*" is too vague and does not provide an objective basis for determining whether such validation has been demonstrated.

- There must be a requirement for public transparency - the results of the Functional Configuration Audit, including the board's review of the Audit Procedure (item (C)(1)(A)(3)) must be made available to the public.

- The current language calls for only "*nominal*" system performance tested and does not define "*nominal*". This is vague and implies that only a cursory evaluation will be done.

```
        (1) Vendor Support
           The vendor shall provide a list of all documentation and data to be audited
and vendor technical personnel shall be available to assist in the performance of the
Functional Configuration Audit.
```

- A recurring theme throughout the Draft Standards - vendors control the entire content of the requirements. In this case, they control what is audited because they provide the list of documentation and data that is to be audited.

- The specification, examination, and auditing of voting systems must be done independently. Ceding of control to vendors of these parts of the process must be prohibited in the Final Standards.

```
        (2) Technical Data
           The vendor shall provide the following technical data:
           (a) copies of all procedures used for module or unit testing, integration
testing and system testing;
           (b) copies of all test cases generated for each module and integration test
and sample ballot formats or other test cases used for system;
           (c) records of all tests performed by the procedures listed above,
including error correction and retest.

        (3) Audit Procedure
           The State Board or its designee shall review the vendor's test procedures and
test results.
           This review shall include an assessment of the adequacy of test cases and
input data to exercise all system functions and to detect program logic and data processing
errors if such be present.
           The review shall also include an examination of all test data which is to
be used as a basis for qualification.
```

- This is insufficient, as the work described here cannot prove that these machines are trustworthy for unaudited use for the following reasons:

1. A functional test does not inspect the entire system for malicious or insecure parts, or relationships of parts.

2. The process relies upon vendor-supplied information rather than independent investigation of the entire system.

3. The "*adequacy of test cases*" cannot be determined by functional assessment, but must be based on knowledge of all programming logic. The enormous number of electronic voting system failures that occur in practice are in part due to the limitation of federal certification testing which is only a functionality test, much of it automated.

4. Automated tests, as described here, do not test the parts of the system which voters and poll workers interact with on election day; This makes no effort to adequately test this crucial component, and means that failures of the touch screens or pushbuttons, printers, the accessible devices, and the display of the ballot in minority languages will first be discovered by voters and poll workers on election day.

```
        B. Physical Configuration Audit

           (1) The Physical Configuration Audit is an examination of the software
configuration against its technical documentation to establish a configuration baseline for
approval. The Physical Configuration Audit shall include an audit of all drawings,
specifications, technical data and test data associated with the system hardware and this
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audit shall establish the system hardware baseline associated with the software baseline. All
subsequent changes to the software baseline configuration shall be subject to re-examination.
All changes to the system hardware which may result in a change in the operation of the
software shall also be subject to re-examination.
```

- This audit establishes the "baseline" of functionality and documentation. Changes can be made without re-examination of the system as long as the changes aren't reflected in this superficial view of the system which is entirely under vendor control. In other words, re-examination is not needed if the software changes as long as its "configuration" doesn't change. Hardware can change as long as it doesn't change the operation of the software. Who says? The Vendor.

- In this formulation, the State Board cannot not look at parts of the voting system that the vendor does not present to them. This again cedes too much control to the vendors and should be prohibited in the Final Standards.

```
            (2) Vendor Support
             The vendor shall provide a list of all documentation and data to be audited
and vendor technical personnel shall be available to assist in the performance of the Physical
Configuration Audit.

            (3) Technical Data
           The vendor shall provide the following technical data:
           (a) identification of all items which are to be a part of the software release;
           (b) identification of all hardware which interfaces with the software;
           (c) configuration baseline data for all hardware which is unique to the system;
               (d) copies of all software documentation which is intended for distribution
to users, including program listings, specifications, operator manual, user manual and
software maintenance manual;
               (e) user acceptance test procedure and acceptance criteria;
               (f) an identification of any changes between the Physical Configuration
Audit and the configuration submitted for the Functional Configuration Audit (FCA) and a
certification that these differences do not degrade the functional characteristics.
```

- Item (f) mentions that certification must be provided that any "*changes between the Physical Configuration Audit and the configuration submitted for the Function Configuration Audit*" do not "*degrade the functional characteristics*".

This language is too vague, fails to explain why any such changes should be tolerated, or why the board should accept the vendor's "certification" that no degradation in functional characteristics has resulted.

- Both "audits" are vendor-managed and based on trust of the vendor rather than a fully independent evaluation of the system. This is must not be allowed in the Final Standards.

```
            (4) Audit Procedure
                Required data items include draft and formal documentation of the vendor's
software development program which are relevant to the design and conduct of Qualification
Tests.
The vendor shall identify all documents, or portions of documents, which contain
proprietary information not approved for public release. The State Board or its designee
shall agree to use the information contained therein solely for the purpose of analyzing and
testing the software and shall refrain from disclosing proprietary information to any other
person or agency without the prior written consent of the vendor. At the conclusion of the
examination, the State Board or its designee shall return to the vendor all such
documentation and shall not retain any copies thereof. The State Board or its designee
shall review the vendor's source code and documentation to verify that the software
conforms to the documentation, and that the documentation is sufficient to enable the user
to install, validate, operate and maintain the voting system. The review shall also include
an inspection of all records of the baseline version against the vendor's release control
system to establish that the configuration, being qualified, conforms to the engineering and
test data
```

- A common failing throughout this document, and a serious one, is that this and other procedures and tests are vendor-managed and based on trust of the vendor rather than a fully independent evaluation of the system.

- This item grants the vendor complete latitude in identifying which documents or portions thereof "contain proprietary information not approved for public release". This is unacceptable. It enables the vendor to classify as proprietary any information it determines it does not want to disclose (for whatever reason), even though such materials may not in fact contain any proprietary information.

- The Board should not be required to return to the vendor any documentation pertaining to the audit. This is especially true for a system we own, as stated in Section 6209.5(B)- "*specific equipment and components examined by the State Board shall become the property of the State Board for as long as the equipment is in use in the State*".

- The "*review of the vendor's source code*" as described in this item is totally inadequate from the standpoint of reviewing the accuracy and security of the system. The Final Standards must model all source code requirements on North Carolina's Public Confidence in Elections law that requires rigorous review of the code used in the state's elections systems.

Regarding source code reviews, the North Carolina law (see Appendix A for the full text) calls for, among many other valuable requirements:

"At a minimum, the State Board's review shall include a review of security, application vulnerability, application code, wireless security, security policy and processes, security/privacy program management, technology infrastructure and security controls, security organization and governance, and operational effectiveness, as applicable to that voting system."

- The results of the Physical Configuration Audit, including the board's review of the Audit Procedure (item (C)(1)(B)(3)) should be made available to the public.

        `C. Functional Tests`

        `(1) For all equipment, functional tests should consist of validation of equipment functional performance by means of procedures under "Laboratory Environmental Test Procedures for Hardware and Software".`

        `(2) Functional tests of voting system software which runs on general purpose data processing equipment shall include all tests similar to those in procedures which are necessary to validate the proper functioning of the software and its ability to control the hardware environment. The tests shall also validate the ability of the software to detect and act correctly upon any error conditions which may result from hardware malfunctions. Detection capability may be contained in the software, the hardware or the operating system. It shall be validated by any convenient means up to and including the introduction of a simulated failure (power off, disconnect a cable, etc.) in any equipment associated with vote processing.`

- As noted earlier, functional tests do not test the entire system, cannot discover all errors nor will they uncover security weaknesses. Simulation testing involving large numbers of voting machines under real world conditions are necessary to verify proper function.

- The Final Standards must specify that testing of voting systems will be conducted in public.

        `2. Software, Hardware, Operating and Support Documentation`

        `(A) Software Qualification`
        `The following system software and firmware vendor data items shall be submitted as a precondition of certification of acceptability for elections use.`

        `(B) Vendor Documentation`
        `Complete product documentation shall be provided to the State Board for voting systems, their components and all auxiliary devices. This documentation shall be sufficient to serve the needs of the voter, the operator and the maintenance technician. It shall be prepared and published in accordance with standard industrial practice for electronic and mechanical equipment such documentation shall include:`

- All required documentation should be specified.

- The description here of "*sufficient*" is too vague, and the "*needs of the voter*" are not adequately described.

        (1) Software Specification

        The Software Specification shall contain and describe the vendor's design standards and conventions, environment and interface specifications, functional specifications, programming architecture specifications, and test and verification specifications. Pre-factory material should include document identification, an abstract of the specification, configuration control status and a table of contents. The body of the specification shall contain the following material:

        (a) System Overview

        The vendor shall identify the system hardware and the environment in which the software will operate and the general design and operational considerations and constraints which have influenced the design of the software.

        (b) Program Description

        The vendor shall provide descriptions of the software system concept, the array of hardware in which it operates, the intended operating environment, the specific software design objectives and development methodology and the logical structure and algorithms used to accomplish the objectives.

        (c) Standards and Conventions

        The vendor shall provide information which can be used as a partial basis for code analysis and test design. It should include a description and discussion of the standards and conventions used in the preparation of this specification and in the development of the software.

        (d) Specification Standards and Conventions

        The vendor shall identify all published and private standards and conventions used to document software development and testing. Vendor internal procedures shall be provided as attachments to this Software Specification.

        (e) Test and Verification Standards

        The vendor shall identify any standards or other documents which are applicable to determination of program correctness and acceptance criteria.

        (f) Quality Assurance Standards

        The vendor shall describe all standards or other documents which are applicable to the examination and testing of the software, including standards for flowcharts, program documentation, test planning and test data acquisition and reporting.

        (g) Operating Environment

        The vendor shall provide a description of the system and subsystem interfaces at which inputs, outputs and data transformations occur. It shall contain or make reference to all operating environment factors which influence the software design.

        (h) Hardware Constraints

        The vendor shall identify and describe the hardware characteristics which influence the design of the software, such as:

        (1) the logic and arithmetic capability of the processor,

        (2) memory read/write characteristics,

        (3) external memory device characteristics

        (4) peripheral device interface hardware data I/O device protocols, and

        (5) operator controls, indicators and displays.

        (i) Software environment

        The vendor shall identify the compiler or assembler to be used for the generation of executable code and a description of the operating system or system monitor. This section shall also contain an overview of the compile-time interaction of the voting system software with library calls and linking.

        (j) Interface Characteristics

        The vendor shall describe the interfaces between executable code and system input-output and control hardware.

        (k) Software Functional Specification

        The vendor shall provide a description of the overall functions which the software performs in the context of its mode or modes of operation. The vendor shall also describe the capabilities and methods for detecting and handling exceptional conditions, system failure, data input/output errors, error logging and audit record generation and security monitoring and control.

        (l) Configurations and Operating Modes

        The vendor shall describe the various software configurations and operating modes of the system; such as preparation for opening of the polling place, vote recording and/or vote processing, closing of the polling place and report generation. For each software function or operating mode, a definition of the inputs (characteristics, tolerances or acceptable ranges) to the function or mode, how the inputs are processed and what outputs are produced (characteristics, tolerances or acceptable ranges) shall be provided.

        (m) External files

In the event that external files are used for data input or output, the definition of information context and record formats shall be provided. The vendor shall also describe the procedures for file maintenance, access privileges and security.

(n) Security

Security requirements and security provisions of the software shall be identified for each system function and operating mode.

(o) Programming Specifications

The vendor shall provide an overview of the software design, structure and implementation algorithms. Whereas the Functional Specification of the preceding section provides a description of what functions the software performs and the various modes in which it operates, this section should be prepared so as to facilitate understanding of the internal functioning of the individual software modules. Implementation of functions shall be described in terms of software architecture, algorithms and data structures and all procedures or procedure interfaces which are vulnerable to degradation in data quality or security penetration shall be identified.

- Again, the Draft Standards call for a vendor-managed rather than a fully independent process.

(p) Test and Verification Specifications

The vendor shall describe the procedures used during software development to verify logical correctness, data quality and security. This description shall include existing standard test procedures, special purpose test procedures, test criteria and experimental design and validation criteria. In the event that this documentation is not available, the Qualification Test agency shall design test cases and procedures equivalent to those ordinarily used as a basis for in-house verification (see below).

(q) Qualification Test Specification

The vendor shall provide a specification for verification and validation of overall software performance, including acceptance criteria for control and data input/output, processing accuracy, data quality assessment and maintenance, exceptional handling and security. The specification shall identify specific procedures by means of which the general suitability of the software for elections use can be assessed and demonstrated. The vendor's specification and procedure shall be used to establish the detailed requirements of the tests described in "Laboratory Environmental Test Procedures for Hardware and Software" of this Standard.

- Again, the Draft Standards call for a vendor-managed rather than a fully independent process.

(r) Acceptance Test Specification

The vendor shall provide a specification for installations, acceptance and readiness verification. This specification shall identify specific procedures by means of which the capability of the software to accommodate actual ballot formats and format logic, and pre-election logic, accuracy and security test requirements of using jurisdictions may be assessed and demonstrated. The vendor's specification shall be used to establish the detailed requirements of the tests described in "Laboratory Environmental Test Procedures for Hardware and Software" of this standard performed to evaluate the adequacy of the vendor's procedures and it shall be suitable for inclusion in the regulations and procedures of user counties when preparing for the conduct of actual elections.

- This paragraph makes a vendor-directed process become the requirement for counties. It also allows automated testing which does not exercise all operational modes, as noted elsewhere in this document. Acceptance Testing at the state and county level must be fully independent of vendors. Further comments are in *Section 6209.10 Acceptance Testing.*

(s) Appendices

The vendor shall provide descriptive material and data supplementing the various sections of the body of the Software Specification. The content and arrangement of appendices shall be at the discretion of the vendor. Topics recommended for amplification and treatment in appendix form include:

(1) Glossary: Provide a listing and brief definition of all software module names and variable names with reference to their locations in the software structure. Include abbreviations, acronyms and terms which are either not commonly used in data processing and software development or which are used in an uncommon semantic context.

(2) References: Provide a list of references to all related vendor documents, data, standards and technical sources used in software development and testing.

      (3) Program Analysis: Provide the results of software configuration analysis, algorithm analysis and selection, timing studies and hardware interface studies reflected in the final software design and coding.

      (4) Security Analysis: Provide a detailed description of the penetration analysis performed to preclude intrusion by unauthorized persons and fraudulent manipulation of elections data. Identify security policies and measures and selection criteria for audit log data categories.

- Again, the Draft Standards call for a vendor-directed rather than a fully independent process.

     (2) Operator Information
    This documentation shall include a physical description of the equipment sufficient to identify all features, control and displays. It shall include a complete procedure for energizing the equipment, for testing and verifying operational status and for identifying all abnormal equipment states. It shall include a complete operating procedure for inserting ballots to be tabulated, for controlling the tabulation process, for monitoring the status of the equipment, for recovering from error conditions and for preparing output reports.
     (3) Maintenance Information
    (a) This documentation shall contain a complete physical and functional description of the equipment and a theory of operation which fully describes the electrical and mechanical function of the equipment, how the processes of ballot handling and reading are performed, how data are handled in the processor and memory sections, how data output is initiated and controlled, how power is converted or conditioned and how test and diagnostic information is acquired and used.
    (b) A complete parts and materials list shall be provided which contains sufficient descriptive information to identify all parts by type, size, value or range and manufacturer's designation.
    (c) Technical illustrations and schematic representations of electronic circuits shall be provided with indications of all test and adjustment points and the nominal value and tolerance or waveform to be measured. Fault detection, isolation and correction procedures or logic diagrams shall be prepared for all operational abnormalities identified by design analysis and operating experiences.

     (4) Logistics, Facilities and Training
    The vendor shall identify all operating and support requirements of the system or component. These requirements include material, facilities and personnel, including furnishings, fixtures, and utilities which will be required to support system operation, maintenance and storage.
     (5) Maintenance Training and Supply
    (a) The vendor shall identify all corrective and preventive maintenance tasks and the level at which they shall be performed. Levels of maintenance shall include operator tasks, maintenance personnel tasks and factory repair.
    (b) Operator tasks shall be limited to the activation of controls to identify irrecoverable error conditions and to the replenishment of consumables such as printer ribbons, paper and the like.
    (c) Maintenance personnel tasks shall include all field maintenance actions which require access to internal portions of the equipment. They shall include the conduct of tests to localize the source of a malfunction; the adjustment, repair or replacement of malfunctioning circuits or components and the conduct of tests to verify restoration to service.
    (d) Factory repair tasks shall be minimized. They shall only include complex and infrequent maintenance functions which require access to proprietary or to specialized facilities and equipment which cannot be obtained by using agency. They shall not number more than two percent of all maintenance tasks and their frequency shall not exceed five percent of the total frequency for all corrective maintenance tasks.
    (e) The vendor shall identify by function all personnel required to operate and support the system. For each functional category, the number of personnel and their skills and skill levels shall be specified.
    (f) The vendor shall specify requirements for the training of each category of operating and support personnel. The vendor shall prepare all materials required in the training activity and shall provide or otherwise arrange for the provision of qualified instructors.

- The "operating personnel" are voters, poll workers, and Elections staff. The regulations must clearly state this.

    (g) The vendor shall recommend a standard complement of supplies, spares and repair parts which will be required to support system operation. This list shall include

the identification of these materials and their individual quantities and sources from which they may be obtained. The vendor shall supply, at vendor's expense, any special tools required to repair or maintain the equipment.

Section 6209. 7 Modifications and Re-examination

As currently written in the Draft Standards, there is no explicit requirement for re-examination of equipment when changes are made to software and/or hardware. The decision whether to retest is left to the discretion of the State Board, without specifying what standards will be used to determine the need for re-certification.

New York State's Election Reform and Modernization Act of 2005 (ERMA) is more specific, requiring re-examination when the "*operation or material*" of any "*feature or component*" is changed.[1] The Final Standards language must be at least as specific.

In electronic voting systems, even small changes to software and hardware (the materials and components of a voting system) can cause problems impossible to detect at a superficial level. It is important for the Final Standards to require that any change to these components must require re-examination.

Section 6209. 7 Modifications and Re-examination Comments

A. Any prospective modification to a previously certified voting system shall be submitted to the State Board.

B. No modification of previously certified voting systems equipment shall be used in any election until such modification has been approved by the State Board.

C. Prospective modification shall be reviewed by the State Board or by an examiner or laboratory of the Board's choice in accordance with the fee schedule established by section 7-201 of the Election Law.

D. Upon completion of a review of such prospective modification, the State Board may cause a re-examination of the entire voting system, or within its discretion, grant continuation of certification pursuant to the provisions of section 7-201 of the Election Law.

• In electronic voting systems, changes to software and hardware can cause problems impossible to detect at a superficial level. Therefore, any change to these components must require re-examination. The Standards must explicitly state this.

Section 6209. 8 Rescission of Certification

This section as written in the Draft Standards fails to specify criteria for rescission, specifying procedures for notifying the State Board of problems, who would pay for re-examinations, and other important details.

When a voting system has it's certification rescinded, the regulations must specifically disallow their further use in elections until the system can be re-certified. In addition, important stakeholders in elections, not least among them the voters, must be notified (with full public notice in a timely fashion) when voting systems are decertified.

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[1] *ERMA Page 4 lines 9-14:*
 2. When any change is made in the operation or material of any feature or component of any machine OR SYSTEM which has been approved pursuant to the provisions of this section, such machine OR SYSTEM must be submitted for such re-examination and reapproval pursuant to the provisions of subdivision one of this section as the state board of elections deems necessary.

Section 6209. 8 Rescission of Certification

A. If at any time subsequent to the State Board's approval of a voting system, the State Board determines that the voting system fails to fulfill the criteria prescribed by statute and these rules, the Board shall notify any users and vendors of that particular voting system that the State Board's approval or certification of that system for future sale of that system in New York State is to be withdrawn.

• This continues to allow systems to be used by voters after their approval has been rescinded. The Final Standards must explicitly disallow the further use of such systems.

• Important stakeholders in elections must be required to be notified if a voting system's certification has been rescinded. These stakeholders must be explicitly notified and include:

1. All voters who have used such system in the previous two elections

2. All poll workers who have worked at elections using the systems.

3. All candidates and parties who were on the ballots that were voted using the equipment.

B. Such notice shall be in writing and shall specify the reasons why the approval or certification of the system is being rescinded. Such notice shall also specify the date on which the rescission is to become effective.

C. Any vendor or user of such voting system may request in writing that the State Board reconsider its decision to rescind approval or certification of the voting system.

D. Upon receipt of such request to reconsider, the State Board shall hold a hearing for the purpose of reconsidering the decision to rescind the approval or certification. Any interested party shall be given the opportunity to submit testimony or documentation in support of or in opposition to the Board's decision to rescind approval or certification.

• Should require publication of notice of such rescission, the reasons for it, publication of the date, time and place of any hearings a minimum of two weeks in advance, and notification by mail to all parties who have requested notification of such State Board activities.

E. The State Board may affirm or reverse its decision.

Section 6209.9 Contracts

This section deals with training, maintenance, evaluation of poll sites, requirements for delivery time, and acceptance testing by counties. Acceptance testing is elaborated in the next section.

Delivery deadlines are short, reflecting the short deadlines for compliance with HAVA and the desire to keep HAVA money, but such short deadlines also force the use of equipment that counties may not be prepared for, and insufficient time for training of poll workers and voters.

Section 6209.9 Contracts Comments

A. In addition to complying with all statutory requirements, all contracts for the purchase of voting systems shall include the following requirements:

(1) Training
Vendors of voting systems shall provide for training of boards of elections personnel in the following:
(a) training prior to delivery of voting systems equipment on procedures for unpacking, assembling and acceptance testing of such equipment;
(b) training for proper use of such equipment including maintenance, storage and transportation procedures;
(c) the vendor shall provide complete operations manuals (including operations manuals for any auxiliary features, programming, hardware, telecommunications systems and central vote tabulating systems) upon delivery of voting systems equipment to a

jurisdiction. Such manuals shall include one copy of procedures to be followed by inspectors at polling places. The vendor shall permit this copy to be reproduced and distributed by the county board of elections at its training school for election inspectors or the vendor shall supply enough copies of the procedures for such distribution;

- All current and future communications capability should be banned, since it opens the election to tampering by individuals in remote locations, and such tampering cannot be detected by election staff or observers.

(d) the vendor shall assist in the training of all elections personnel (including election inspectors) during the first two elections, to include a general election, in which the equipment is used. Such assistance relating to the number of people and the hours of assistance shall be identified in the executed contract.
(e) training county boards of elections personnel in the procedures to be used to accomplish ballot face layout and ballot programming.

(2) Service provisions
(a) The contract shall identify the obligations of the vendor to rectify any problems identified through testing any or all of the voting systems equipment delivered to the purchaser.

- Given the superficiality of state certification testing and the experience of other states with failures of equipment during elections, it is likely that problems with equipment will first be detected during elections. For this reason, the Final Standards must explicitly create a formal mechanism and procedures for voters, poll workers, candidates, and parties to report operational failures of equipment during elections. The Final Standards must also require such reports to be dealt with in a timely manner before candidates' rights to request recounts expires, and prior to certification of the election results.

- Jurisdictions must be required to acknowledge receipt of such reports, post them in public if the reporting person or party so requests, and investigate and resolve issues related to the reported failures prior to certification of the election.

- If operational failure of equipment is verified, proper remedies must be listed in the Final Standards. This should include the conducting of a new election, paid for by the vendor if lesser actions cannot remedy the failures that occurred.

(b) The vendor shall, without additional cost, provide to the purchaser a five-year guarantee of parts and service, that such voting systems equipment shall be kept in good working order and that other statutory requirements are met.
(c) The vendor shall provide to the purchaser of said equipment a detailed listing of proper maintenance, storage and transportation procedures to be carried out by each purchaser.
(d) The vendor and the purchaser shall agree in writing as to the proper maintenance procedures to be implemented on each piece of equipment and shall further agree in writing as to the obligations of each party for servicing and maintenance procedures.
(e) An agreement as to the time period in which the vendor must correct any problems or defect in the voting equipment or voting systems.
(f) The vendor shall provide the purchaser with the criteria necessary for the proper operation of the voting equipment at a polling place.

(3) Polling site survey
(a) The vendor, together with the purchaser, shall survey the present polling places in a jurisdiction to which its voting equipment has been sold, to determine whether or not such polling places meet environmental conditions for the proper operation of the voting equipment. This provision shall apply to those polling places which are in use at the time of the proposed sale.
(b) If any polling places are not compatible, the vendor shall advise the jurisdiction purchasing the voting equipment on the methods or procedures that the said jurisdiction may use to remedy any such problem.

(4) Additional Requirements
(a) delivery deadline shall be not less than three months prior to the first election in which said units shall be used or, if the contract is for ten or less units, not less than one month prior to such election;

- Three months is insufficient time for training elections staff, ballot programming, manually entered Logic and Accuracy testing, voter and poll worker training, etc. Six months is barely enough for New York State counties facing a complete transformation from lever machine procedures and practices.

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            (b) acceptance testing requirements;
            (c) storage and maintenance responsibilities; and
            (d) shipping delivery guidelines and requirements.


    B. For purposes of the initial purchases of voting machines and systems, pursuant to the
federal Help America Vote Act of 2002, and the state Election Reform and Modernization
Act of 2005, all contracts entered by the State Board of Elections, or local boards of
elections, with vendors, must comply with Office of General Services (OGS) regulations on
Purchasing Procedures and Purchases from Preferred Sources, found in NYCRR Title 9,
Subtitle G, Subchapter A, Part 250, section 250.0 through and including section 250.11.
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Section 6209. 10 Acceptance Testing

As currently written, the Draft Standards Section on Acceptance Testing describes hasty and superficial tests. This is insufficient.

In order for Acceptance Testing to have any value, we must do more than just a perform a cursory evaluation of a few machines. Acceptable Acceptance Testing must include, among other things, a test "mock election", with maximum anticipated numbers of voters and votes, and a complete audit including inspection of the audit logs and other printouts from the system.

Finally, all logs, records and/or results of this and any other testing must be made fully available to the public.

Section 6209. 10 Acceptance Testing Comments

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    A. County boards of elections, under the supervision of the State Board, shall conduct an
acceptance test on each unit of any voting system purchased by such county. Such
acceptance testing shall begin within seventy-two hours of delivery of the equipment from
the vendor to the purchaser.
```

- New York has 62 counties. It is hard to see how sufficient technical staff can be deployed by the State Board to provide this supervision. This will lead to superficial acceptance testing at the county level, as many of them will not have the expertise to properly test systems on their own. The Final Standards should explicitly state the specifics of how this supervision is to be provided.

```
    B. Such testing shall be conducted under the supervision of the State Board in accordance
with the testing requirements and formats provided by the State Board. This test may consist
in part, of the original certification test deck as utilized by the State Board in the
certification of the system.
```

- If no other tests are performed this is inadequate. There must be requirements for a test "mock election", with maximum numbers of voters and votes, and a complete audit including inspection of the audit logs and other printouts from the system. At least one such test must be performed before the systems can be deemed "accepted". If such real world condition testing is not done, then the first time the system will be fully tested will be on Election Day.

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    C. The results of acceptance testing shall be certified to the State Board and entered
into the maintenance log for each piece of equipment.

    D. If the acceptance test reveals any improper or faulty absentee ballot counting systems
equipment, the vendor must make corrections to such improper or faulty equipment within
30 days from the date of such acceptance testing.
```

- The Final Standards must state that any logs, records and/or results of this and any other testing must be made fully available to the public.

- This could present a timing problem to smaller counties -- the equipment does not be delivered until one month prior to the election, but if the equipment does not work, the vendor has 30 days to make corrections. Assuming that a percentage of the corrections lead to other problems which also require correction, some counties may have to resort to the use of emergency paper ballots for all voters.

    E. The State Board, upon its review of the acceptance testing of such equipment may, at its discretion, suspend certification of said equipment for future sales in the State of New York in accordance with the provisions of these regulations.

- It would be more efficient to have more rigorous up-front testing than to discover that testing was inadequate after the equipment is purchased and delivered. If acceptance testing shows many problems, as has happened in other states, then the units should not be used in an election.

Section 6209. 11 Routine Maintenance Test of DRE Voting Equipment

As noted elsewhere in this document, a recurring failure of the Draft Voting System Standards is that DREs are held to a far less stringent standard than paper based voting systems. In this section, the testing of DRE equipment seems to be limited to test periods, but does not call for testing during the election process as required of the Paper Ballot (*Section 6209.12 Operational and Testing Procedures for Paper-based Voting*). Nor does this section call for public demonstrations of DREs as is done for the Paper Ballots. It is imperative that the Final Standards specify that DREs and paper based systems be held to the same standards.

Periodic testing is good, but the number of ballots (minimum 200) is not enough to "stress test" the equipment. Many computer errors do not show up until many items of data (ballots) are entered, and malicious code can be programmed to kick in after a large number of ballots have been entered.

"Automated testing" which consists of running a program to "test" the machine leaves many parts of the election system untested, but this section allows this superficial testing for DREs. In contrast, *Section 6209.12 Operational and Testing Procedures for Paper-based Voting*, specifies that "complete testing" shall be conducted.

Section 6209. 11 Routine Maintenance Test of DRE Voting Equipment Comments

    A. In addition to vendor-prescribed maintenance tasks and diagnostic tests, a test of DRE voting equipment shall be conducted on each piece of equipment owned by a county board of elections.

    B. Such testing shall be administered periodically and be completed during the following periods:
        (1) January 15-April 15
        (2) April 16-July 15
        (3) July 16-September 15
        (4) September 16-November 15

    C. Such testing shall consist of the casting of a minimum of 200 ballots on each piece of equipment during each of the prescribed periods outlined.

    D. Such tests shall be developed by the State Board, utilizing a ballot format prepared and programmed by each county board. Each such test shall be approved by the State Board prior to the first periodic test. The State Board shall reserve the right to revise said testing format, based upon its audit and review.

    E. The test ballot format during the period including July 16 - September 15 shall consist of the primary ballot as it has been certified by the board of elections, if said equipment is to be utilized in a primary election.

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        F. The test ballot format for the period between ballot certification and seven days
before election shall consist of the general election ballot as it has been certified by the
board of elections.

        G. The result of each periodic test shall be entered upon the maintenance log for each
such piece of equipment, together with any other information prescribed in said log by the
State Board.

        H. The county board of elections shall certify to the State Board, the completion of each
periodic maintenance test. Such certification shall be on a form prescribed by and
furnished by the State Board, and shall be accompanied by copies of each maintenance
log.

        I. The State Board may, upon review of the maintenance logs, require further testing of
any such piece of equipment or may, for sufficient cause, remove a piece of equipment
from use in an election until further examination and testing has been completed.
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- Specifics must be given as to what "*sufficient cause*" means.

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        J. County boards shall make the equipment available to the State Board for any such
additional testing and shall provide such assistance as may be deemed necessary.
```

- Periodic testing is good, but the number of ballots (minimum 200) is not enough to "stress test" the equipment. Many computer errors do not show up until many items of data (ballots) are entered.

- It would be better to merge sections containing requirements for DREs and Paper based systems. If separate sections are maintained, this Section must have an equivalent requirement to that found in **Section 6909.14.D, "Routine Maintenance for Paper-based Voting Equipment**". The requirement for paper based systems stated there is:
 "*The State Board, upon written request of a vendor or any other interested or aggrieved party, may, after a hearing, suspend the use of any paper-based voting system in any county in which proper maintenance procedures or proper servicing by the manufacturer have not been fully implemented resulting in malfunction of such equipment.*"

This is another example in the Draft Standards of holding paper ballot based systems to a higher standard than DREs. The Final Standards must eliminate this unequal approach to the different system types.

Section 6209.12 Operational and Testing Procedures for Paper-based Voting Systems

Another section where paper based voting systems are held to a higher standard than DREs.

For example, in this section "Complete testing" is not defined, but DREs do not have to be "completely" tested in the equivalent section. Further examples of this are found below.

As noted before, the Final Standards must consolidate Testing and Maintenance requirements for DRE and Paper Based Systems.

Section 6209.12 Operational and Testing Procedures for Paper-based Voting Systems Comments

- All of the sections in **Section 6209.12 Operational and Testing Procedures for Paper-based Voting Systems** should also be applied to DREs. The "test deck" concept should also be applied to DREs. That is, no automated testing should be allowed as noted in previous sections.

```
A. Complete testing of the paper-based voting system shall be conducted before the use
of the system in any election.
```

- "*Complete testing*" is not defined, and it is not specified why DREs are not to be "completely" tested in other sections.

B. Pre-election Test Deck

Not more than 20 days before the day designated by the county board for the counting of paper ballots, the board shall test the system to ascertain that it will properly count the votes cast for all offices and all questions. The test shall be conducted by processing a test deck for each ballot style. If the system does not accurately count the test deck, the cause for the error or errors shall be ascertained and corrected and an errorless count shall be made before the system is approved for use in the count of actual ballots. The commissioners of the county board shall certify that they have reviewed and verified the results of said testing.

C. Public Demonstration

In addition to the pre-election test, the county board shall conduct a public demonstration of the test utilizing all or a portion of the test deck. Appropriate written notice of the public demonstration shall be sent to the chair of the county committee of each political party and to each candidate whose name appears on the ballot. One representative of each political party and one representative of each candidate whose name appears on the ballot shall be entitled to be present at the test.

- The Draft Regulations consistently omit voters, poll workers, and good government groups as stakeholders in the conduct of elections. There must be explicit provision for their inclusion.

- Comparable public testing must be required for DREs.

The commissioners of the county board shall certify that they have reviewed and verified the results of the public demonstration testing.

D. Storage of Test Deck

Following the pre-election testing and public demonstration testing, the test deck shall be locked in secure storage until immediately preceding the official tabulation of paper ballots. All copies of test data, including copies of ballot programming, shall be stored with the test deck, in locked secured storage.

E. Testing Immediately Preceding Official Tabulation of Paper Ballots

Immediately preceding the official tabulation of paper ballots, the following testing shall be completed:

(1) The paper ballot counting system shall be cleared of all votes and a printed report shall be produced by the system to confirm that all voting positions are at zero.

(2) The test deck shall be run through the system to demonstrate that the system can accurately count votes and the results shall be compared to the pre-election test data. The commissioners of the county board shall certify that they have reviewed and verified the comparison of the test data before the official tabulation of ballots is conducted.

(3) The system shall again be cleared of all votes and a printed report shall be produced by the system to confirm that all voting positions are at zero.

F. Testing During Ballot Tabulation

The system shall be so designed and constructed that, at the discretion of the county board, it shall be possible to halt the ballot tabulation at a point when a portion of the election districts have been counted, and run the test deck to demonstrate, as in the pre-count tests listed in section (E) above, the accuracy and dependability of the count without jeopardizing any official tabulation of results that may be on the equipment at that time.

G. Testing Following the Machine Tabulation of Ballots

Immediately following the machine tabulation of the ballots from all the election districts and the production of the county-wide totals of votes, the pre-count tests listed in section (E) above, shall be run so as to demonstrate the accuracy and dependability of the count.

H. System Management

(1) The county board of elections shall have management control over all resources employed during the tabulation process, including the processing of ballots and the testing of equipment.

(2) If it becomes necessary to transfer control of any equipment back to the vendor for repairs, operational tabulation activities may not be carried out on the equipment while it is solely under the vendor's control.

- Comparable requirements must apply to DRE equipment. Moreover, the testing of DRE equipment must consist of votes entered in the same manner as votes are to be entered during an election, including use of all accessible devices and minority language interfaces, inspection of the VVPAT as it is generated, second-chance voting, attempted entry of overvotes and undervotes, extraction of vote tallies after votes have been entered, and inspection of all audit logs produced by the DRE equipment.

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    I. State Board Support During First Year of Operation

        (1) During the first two elections in which such equipment is used, including a
general election, the State Board shall assist and supervise the operation of the paper-
based voting system. Such supervision shall include but not be limited to:
            (a) preparation of test deck
            (b) supervision of pre-election, public demonstration and pre-tabulation tests
            (c) supervision of official tabulation of ballots on the day to be designated by
the county board of elections

        (2) During successive years, the State Board, whenever it deems necessary, or at
the request of a county board of elections, shall assist in the operation of the system.
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Section 6209.13 Submission of Procedures for Unofficial Tally of Results of Election

No comments on Section 6209.13.

Section 6209.13 Submission of Procedures for Unofficial Tally of Results of Election Comments

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    County boards of elections which adopt procedures pursuant to section 9-126(3) of
the Election Law shall submit such procedures to the State Board of Elections.
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Section 6209.14 Routine Maintenance for Paper-based Voting Equipment

There is no reason to have a section specifically for maintenance of paper based voting systems. The separate sections referring to standards, maintenance and testing for DREs and paper based systems should be merged. It would make for a level playing field, be easier to read, and help ensure that there are no exceptions.

It is unreasonable that the provisions of this section are applied only to paper-based systems and not also to DREs.

Section 6209. 14 Routine Maintenance for Paper-based Voting Equipment Comments

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A. Each county which purchases a paper-based voting system shall keep a detailed log
of maintenance performance and testing procedures.
    B. Such logs shall be in a format provided by the State Board and same shall have been
reviewed by the vendor.
    C. Such logs shall be provided regularly to the State Board, for their review and
inspection.
    D. The State Board, upon written request of a vendor or any other interested or
aggrieved party, may, after a hearing, suspend the use of any paper-based voting system
in any county in which proper maintenance procedures or proper servicing by the
manufacturer have not been fully implemented resulting in malfunction of such equipment.
```

- Another demonstration of how these Draft Regulations fail to provide a level playing field for optical scan systems compared to DRE systems. Paragraph D allows any interested party to call into question a machine, but, in paragraph I. of **Section 6209.10 Acceptance Testing** on the DREs does not call for these types of requests and limits the calling to the State Board:

" I. The State Board may, upon review of the maintenance logs, require further testing of any such piece of equipment or may, for sufficient cause, remove a piece of equipment from use in an election until further examination and testing has been completed."

E. The State Board may reinstate the certification based upon review of these procedures and a review of the maintenance logs.

Section 6209.15 Demonstration Models

No comments on Section 6209.15.

Section 6209.15 Demonstration Models

A. During the first five (5) years after purchase, any county which purchases voting equipment systems shall provide a model or diagram of such voting system's equipment for each polling place in its jurisdiction.

B. If a model or diagram is used, such model or diagram must meet the following specifications:
    (1) be approved by the State Board
    (2) may not contain the name of any party or independent body which has been continuously used in New York State.
    (3) display a ballot layout which shall consist of at least two party rows and eight voting positions including at least one multiple-candidate office (vote for two).

C. If a model is used, each model must
    (1) be no less than 11 inches by 14 inches
    (2) be operated by electricity and/or a battery power source
    (3) enable the voter to vote for a candidate
    (4) enable the voter to negate or change a vote
    (5) enable the voter to cast the ballot.
    (6) specify how and where to cast a write-in ballot.

D. If a diagram is used,
    (1) shall specify how to mark or cast a ballot
    (2) shall specify how and where to mark or cast a write-in ballot
    (3) shall be no smaller than 11 inches by 17 inches

This is the text of North Carolina's Public Confidence in Elections law which requires rigorous review of the source code used in the state's elections systems. Final New York State Voting System Standards requirements for source code should be modeled on this law. In the text below, the language relevant to source code requirements are highlighted.

GENERAL ASSEMBLY OF NORTH CAROLINA

SESSION 2005

SESSION LAW 2005-323

SENATE BILL 223

AN ACT TO RESTORE PUBLIC CONFIDENCE IN THE ELECTION PROCESS BY REQUIRING THAT THE STATE BOARD OF ELECTIONS, THROUGH THE DEVELOPMENT OF A REQUEST FOR PROPOSAL, ENSURE THAT ALL VOTING SYSTEMS GENERATE EITHER A PAPER BALLOT OR A PAPER RECORD BY WHICH VOTERS MAY VERIFY THEIR VOTES BEFORE CASTING THEM AND WHICH PROVIDES A BACKUP MEANS OF COUNTING THE VOTE THAT THE VOTER CASTS; BY PROVIDING STATUTORY GUIDANCE AS TO COUNTING; **BY STANDARDIZING PURCHASING OF VOTING SYSTEMS IN NORTH CAROLINA, INCLUDING A REVIEW OF SOURCE CODE FOR SOFTWARE RELATED TO THOSE VOTING SYSTEMS AND AUTHORIZATION TO ESTABLISH THE ROLE OF THE STATE BOARD OF ELECTIONS AND COUNTY BOARD OF ELECTIONS RELATED TO TRAINING AND SUPPORT OF VOTING SYSTEMS;** BY REQUIRING POSTELECTION TESTING OF VOTING SYSTEMS, INCLUDING A PAPER SAMPLE-COUNT; BY EXPANDING THE RIGHT TO A HAND-TO-EYE RECOUNT OF PAPER BALLOTS; AND BY PERMITTING A PILOT PROGRAM TO EXPERIMENT WITH NONPAPER MEANS OF VOTER VERIFICATION AND BALLOT BACKUP.

The General Assembly of North Carolina enacts:

       SECTION 1.(a) Effective August 1, 2005, and applicable to any voting systems upgraded or acquired on or after that date and to all voting systems used in the State during any election during or after 2006, G.S. 163-165.7 reads as rewritten:

"**§ 163-165.7. Voting systems: powers and duties of State Board of Elections.**

    (a)   ~~The State Board of Elections shall have authority to approve types, makes, and models of voting systems for use in elections and referenda held in this State. Only voting systems that have been approved by the State Board shall be used to conduct elections under this Chapter, and the approved systems shall be valid in any election or referendum held in any county or municipality. The State Board may, upon request of a local board of elections, authorize the use of a voting system not approved for general use.~~ Only voting systems that have been certified by the State Board of Elections in accordance with the procedures and subject to the standards set forth in this section and that have not been subsequently decertified shall be permitted for use in elections in this State. Those certified voting systems shall be valid in any election held in the State or in any county, municipality, or other electoral district in the State. Subject to all other applicable rules adopted by the State Board of Elections and, with respect to federal elections, subject to all applicable federal regulations governing voting systems, paper ballots marked by the voter and counted by hand shall be deemed a certified voting system. The State Board of Elections shall certify optical scan voting systems, optical scan with ballot markers voting systems, and direct record electronic voting systems if any of those systems meet all applicable requirements of federal and State law. The State Board may certify additional voting systems only if they meet the requirements of the request for proposal process set forth in this section and only if they generate either a paper ballot or a paper record by which voters may verify their votes before casting them and which provides a backup means of counting the vote that the voter casts. Those voting systems may include optical scan and direct record electronic (DRE) voting systems. In consultation with the Office of Information Technology Services, the State Board shall develop the requests for proposal subject to the provisions of this Chapter and other applicable State laws. Among other requirements, the request for proposal shall require at least all of the following elements:

(1)   That the vendor post a bond or letter of credit to cover damages resulting from defects in the voting system. Damages shall include, among other items, any costs of conducting a new election attributable to those defects.

(2)   That the voting system comply with all federal requirements for voting systems.

(3)   That the voting system must have the capacity to include in precinct returns the votes cast by voters outside of the voter's precinct as required by G.S. 163-132.5G.

(4)   With respect to electronic voting systems, that the voting system generate a paper record of each individual vote cast, which paper record shall be maintained in a secure fashion and shall serve as a backup record for purposes of any hand-to-eye count, hand-to-eye recount, or other audit. Electronic systems that employ optical scan technology to count paper ballots shall be deemed to satisfy this requirement.

(5)   With respect to DRE voting systems, that the paper record generated by the system be viewable by the voter before the vote is cast electronically, and that the system permit the voter to correct any discrepancy between the electronic vote and the paper record before the vote is cast.

(6)   With respect to all voting systems using electronic means, that the vendor provide access to all of any information required to be placed in escrow by a vendor pursuant to G.S 163-165.9A for review and examination by the State Board of Elections; the Office of Information Technology Services; the State chairs of each political party recognized under G.S. 163-96; the purchasing county; and designees as provided in subdivision (9) of subsection (d) of this section.

(7)   That the vendor must quote a statewide uniform price for each unit of the equipment.

(8)   That the vendor must separately agree with the purchasing county that if it is granted a contract to provide software for an electronic voting system but fails to debug, modify, repair, or update the software as agreed or in the event of the vendor having bankruptcy filed for or against it, the source code described in G.S. 163-165.9A(a) shall be turned over to the purchasing county by the escrow agent chosen under G.S. 163-165.9A(a)(1) for the purposes of continuing use of the software for the period of the contract and for permitting access to the persons described in subdivision (6) of this subsection for the purpose of reviewing the source code.

In its request for proposal, the State Board of Elections shall address the mandatory terms of the contract for the purchase of the voting system and the maintenance and training related to that voting system.

No voting system acquired or upgraded by a county before August 1, 2005, shall be used in an election during or after 2006 unless the county can demonstrate to the State Board of Elections compliance with the requirements in subdivisions (1) through (8) of this subsection, where those requirements are applicable to the type of voting system involved.

(b)   The State Board may also, upon notice and hearing, disapprove decertify types, makes, and models of voting systems. Upon disapproving decertifying a type, make, or model of voting system, the State Board shall determine the process by which the disapproved decertified system is discontinued in any county. If a county makes a showing that discontinuance would impose a financial hardship upon it, the county shall be given up to four years from the time of State Board disapproval to replace the system. A county may appeal a decision by the State Board concerning discontinuance of a voting system the process by which the decertified system is discontinued in that county to the superior court in that county or to the Superior Court of Wake County. The county has 30 days from the time it receives notice of the State Board's decision on discontinuancethe process by which the decertified system is discontinued in that county to make that appeal.

(c)   Prior to certifying a voting system, the State Board of Elections shall review, or designate an independent expert to review, all source code made available by the vendor pursuant to this section and certify only those voting systems compliant with State and federal law. At a minimum, the State Board's review shall include a review of security, application vulnerability, application code, wireless security, security policy and processes, security/privacy program management, technology infrastructure and security controls, security organization and governance, and operational effectiveness, as applicable to that voting system. Any portion of the report containing specific information related to any trade secret as designated pursuant to G.S. 132-1.2 shall be confidential and shall be accessed only under the rules adopted pursuant to subdivision (9) of subsection (d) of this section. The State Board may hear and discuss the report of any such review under G.S. 143-318.11(a)(1).

(d)   Subject to the provisions of this Chapter, the State Board of Elections shall prescribe rules for the adoption, handling, operation, and honest use of certified voting systems, including, but not limited to,including all of the following:

(1)   Procedures for county boards of elections to utilize when recommending the purchase of a Types, makes, and models of certified voting systems approved system for use in this Statethat county.

(2)   Form of official ballot labels to be used on voting systems.

(3)   Operation and manner of voting on voting systems.

(4)   Instruction of precinct officials in the use of voting systems.

(5)   Instruction of voters in the use of voting systems.

(6)   Assistance to voters using voting systems.

(7)   Duties of custodians of voting systems.

(8)   **Examination and testing of voting systems in a public forum in the county before and after use in an election.**

(9)   Notwithstanding G.S. 132-1.2, procedures for the review and examination of any information placed in escrow by a vendor pursuant to G.S. 163-165.9A by only the following persons:

        a.   State Board of Elections.

        b.   Office of Information Technology Services.

        c.   The State chairs of each political party recognized under G.S. 163-96.

        d.   The purchasing county.

        Each person listed in sub-subdivisions a. through d. of this subdivision may designate up to three persons as that person's agents to review and examine the information. No person shall designate under this subdivision a business competitor of the vendor whose proprietary information is being reviewed and examined. For purposes of this review and examination, any designees under this subdivision and the State party chairs shall be treated as public officials under G.S. 132-2.

(10)   With respect to electronic voting systems, procedures to maintain the integrity of both the electronic vote count and the paper record. Those procedures shall at a minimum include procedures to protect against the alteration of the paper record after a machine vote has been recorded and procedures to prevent removal by the voter from the voting enclosure of any paper record or copy of an individually voted ballot or of any other device or item whose removal from the voting enclosure could permit compromise of the integrity of either the machine count or the paper record.

Any rules adopted under this subsection shall be in conjunction with procedures and standards adopted under G.S. 163-182.1, are exempt from Chapter 150B of the General Statutes, and are subject to the same procedures for notice and publication set forth in G.S. 163-182.1.

(e)   The State Board of Elections shall facilitate training and support of the voting systems utilized by the counties."

SECTION 1.(a1) G.S. 163-166.7(c) reads as rewritten:

"(c)   The State Board of Elections shall promulgate rules for the process of voting. Those rules shall emphasize the appearance as well as the reality of dignity, good order, impartiality, and the convenience and privacy of the voter. Those rules, at a minimum, shall include procedures to ensure that all the following occur:

(1)   The voting system remains secure throughout the period voting is being conducted.

(2)   Only properly voted official ballots or paper records of individual voted ballots are introduced into the voting system.

(3)   Except as provided by G.S. 163-166.9, no official ballots leave the voting enclosure during the time voting is being conducted there. The rules shall also provide that during that time no one shall remove from the voting enclosure any paper record or copy of an individually voted ballot or of any other device or item whose removal from the voting enclosure could permit compromise of the integrity of either the machine count or the paper record.

(4)   All improperly voted official ballots or paper records of individual voted ballots are returned to the precinct officials and marked as spoiled.

(5)   Voters leave the voting place promptly after voting.

(6)   Voters not clearly eligible to vote in the precinct but who seek to vote there are given proper assistance in voting a provisional official ballot or guidance to another voting place where they are eligible to vote.

(7)   Information gleaned through the voting process that would be helpful to the accurate maintenance of the voter registration records is recorded and delivered to the county board of elections.

(8)   The registration records are kept secure.

(9)   Party observers are given access as provided by G.S. 163-45 to current information about which voters have voted.

(10)   The voter, before voting, shall sign that voter's name on the pollbook, other voting record, or voter authorization document. If the voter is unable to sign, a precinct official shall enter the person's name on the same document before the voter votes."

SECTION 1.(b) Section 11 of S.L. 2003-226, which would have made amendment to G.S. 163-165.7 effective January 1, 2006, is repealed.

SECTION 1.(c) In order to carry forward the first of two amendments that would have been made by Section 11 of S.L. 2003-226 to the old version of G.S. 163-165.7, effective January 1, 2006, G.S. 163-165.7, as rewritten by subsection (a) of this section, is amended by adding the following new subsection:

"(a1)   Federal Assistance. – The State Board may use guidelines, information, testing reports, certification, decertification, recertification, and any relevant data produced by the Election Assistance Commission, its Standards Board, its Board of Advisors, or the Technical Guidelines Development Committee as established in Title II of the Help America Vote Act of 2002 with regard to any action or investigation the State Board may take concerning a voting system. The State Board may use, for the purposes of voting system certification, laboratories accredited by the Election Assistance Commission under the provisions of section 231(2) of the Help America Vote Act of 2002."

SECTION 1.(d) In order to carry forward the second of two amendments that would have been made by Section 11 of S.L. 2003-226 to the old version of G.S. 163-165.7, effective January 1, 2006, G.S. 163-165.7(d), as rewritten by subsection (a) of this section, is amended by adding the following new subdivision:

"(11)   Compliance with section 301 of the Help America Vote Act of 2002."

SECTION 1.(e) G.S. 163-132.5G reads as rewritten:

"§ 163-132.5G. Voting data maintained by precinct.

To the extent that it can do so without compromising the secrecy of an individual's ballot, each county board of elections shall maintain voting data by precinct so that precinct returns for each item on the ballot shall include the votes cast by residents of the precinct who voted by provisional ballot and by absentee ballot, both mail and one-stop. The county board shall not be required to report provisional and absentee voting data by precinct until 60 days after the election. The State Board of Elections shall adopt rules for the enforcement of this section with the goal that all voting data shall be reported by precinct by the 2006 election. ~~Those rules shall provide for exemptions where the expense of compliance would place a financial hardship on a county. Those rules shall provide for compliance by 2004 for counties the State Board determines are capable of complying by that year.~~"

SECTION 1.(f) G.S. 163-165.1(e) reads as rewritten:

"(e)   Voted ballots and paper records of individual voted ballots shall be treated as confidential, and no person other than elections officials performing their duties may have access to voted ballots or paper records of individual voted ballots except by court order or order of the appropriate board of elections as part of the resolution of an election protest or investigation of an alleged election irregularity or violation. Voted ballots and paper records of individual voted ballots shall not be disclosed to members of the public in such a way as to disclose how a particular voter voted, unless a court orders otherwise."

SECTION 2.(a) Part 2 of Article 14A of Chapter 163 of the General Statutes is amended by adding a new section to read:

"§ 163-165.9A. Voting systems: requirements for voting systems vendors; penalties.

(a)   Duties of Vendor. – Every vendor that has a contract to provide a voting system in North Carolina shall do all of the following:

(1)   **The vendor shall place in escrow with an independent escrow agent approved by the State Board of Elections all software that is relevant to functionality, setup, configuration, and operation of the voting system, including, but not limited to, a complete copy of the source and executable code, build scripts, object libraries, application program interfaces, and complete documentation of all aspects of the system including, but not limited to, compiling instructions, design documentation, technical documentation, user documentation, hardware and software specifications, drawings, records, and data. The State Board of Elections may require in its request for proposal that additional items be escrowed, and if any vendor that agrees in a contract to escrow additional items, those items shall be subject to the provisions of this section. The documentation shall include a list of programmers responsible for creating the software and a sworn affidavit that the source code includes all relevant program statements in low-level and high-level languages.**

(2)   **The vendor shall notify the State Board of Elections of any change in any item required to be escrowed by subdivision (1) of this subsection.**

(5)   The vendor shall maintain an office in North Carolina with staff to service the contract.

SECTION 2.(b) This section applies with respect to purchase or upgrade of any voting system on or after August 1, 2005.

SECTION 3. Effective August 1, 2005, G.S. 163-165.8 reads as rewritten:

"**§ 163-165.8. Voting systems: powers and duties of board of county commissioners.**

The board of county commissioners, with the approval of the county board of elections, may adopt and ~~purchase or lease~~ acquire only a voting system of a type, make, and model ~~approved~~ certified by the State Board of Elections for use in some or all voting places in the county at some or all elections.

The board of county commissioners may decline to adopt and ~~purchase or lease~~ acquire any voting system recommended by the county board of elections but may not adopt and ~~purchase or lease~~ acquire any voting system that has not been approved by the county board of elections. Article 8 of Chapter 143 of the General Statutes does not apply to the purchase of a voting system certified by the State Board of Elections."

SECTION 4. Effective August 1, 2005, G.S. 163-165.9 reads as rewritten:

"**§ 163-165.9. Voting systems: powers and duties of county board of elections.**

(a)   Before approving the adoption and ~~purchase or lease~~ acquisition of any voting system by the board of county commissioners, the county board of elections shall do all of the following:

(1)   ~~Obtain a current financial statement from the proposed vendor or lessor of the voting system and send copies of the statement to the county attorney and the chief county financial officer.~~Recommend to the board of county commissioners which type of voting system should be acquired by the county.

(2)   Witness a demonstration, in that county or at a site designated by the State Board of Elections, of the type of voting system to be recommended ~~by the proposed vendor or lessor~~ and also witness a demonstration of at least one other type of voting system ~~approved~~ certified by the State Board of Elections.

(3)   Test, during an election, the proposed voting system in at least one precinct in the county where the voting system would be used if adopted.

(b)   After the acquisition of any voting system, the county board of elections shall comply with any requirements of the State Board of Elections regarding training and support of the voting system."

SECTION 5.(a) G.S. 163-182.1(b) reads as rewritten:

"(b)   Procedures and Standards. – The State Board of Elections shall adopt uniform and nondiscriminatory procedures and standards for voting systems. The standards shall define what constitutes a vote and what will be counted as a vote for each category of voting system used in the State. The State Board shall adopt those procedures and standards at a meeting occurring not earlier than 15 days after the State Board gives notice of the meeting. The procedures and standards adopted shall apply to all elections occurring in the State and shall be subject to amendment or repeal by the State Board acting at any meeting where notice that the action has been proposed has been given at least 15 days before the meeting. These procedures and standards shall not be considered to be rules subject to Article 2A of Chapter 150B of the General Statutes. However, the State Board shall publish in the North Carolina Register the procedures and standards and any changes to them after adoption, with that publication noted as information helpful to the public under G.S. 150B-21.17(a)(6). Copies of those procedures and standards shall be made available to the public upon request or otherwise by the State Board. For optical scan and direct record electronic voting systems, and for any other voting systems in which ballots are counted other than on paper by hand and eye, those procedures and standards shall do both of the following:

(1)   Provide for a sample hand-to-eye count of the paper ballots or paper records of a statewide ballot item in every county. The presidential ballot item shall be the subject of the sampling in a presidential election. If there is no statewide ballot item, the State Board shall provide a process for selecting district or local ballot items to adequately sample the electorate. The sample chosen by the State Board shall be of full precincts, full counts of absentee ballots, and full counts of one-stop early voting sites. The size of the sample of each category shall be chosen to produce a statistically significant result and shall be chosen after consultation with a statistician. The actual units shall be chosen at random. In the event of a material discrepancy between the electronic or mechanical count and a hand-to-eye count, the hand-to-eye count shall control, except where paper ballots or records have been lost or destroyed or where there is another reasonable basis to conclude that the hand-to-eye count is not the true count. If the discrepancy between the hand-to-eye count and the mechanical or electronic count is significant, a complete hand-to-eye count shall be conducted.

(2)   ~~provide~~ Provide that if the voter selects votes for more than the number of candidates to be elected or proposals to be approved in a ballot item, the voting system shall do all the following:

  ~~(1)~~a.   Notify the voter that the voter has selected more than the correct number of candidates or proposals in the ballot item.

  ~~(2)~~b.   Notify the voter before the vote is accepted and counted of the effect of casting overvotes in the ballot item.

  ~~(3)~~c.   Provide the voter with the opportunity to correct the official ballot before it is accepted and counted."

SECTION 5.(b) G.S. 163-182.2 reads as rewritten:

"§ 163-182.2. Initial counting of official ballots.

(a)   The initial counting of official ballots shall be conducted according to the following principles:

(1)   Vote counting at the precinct shall occur immediately after the polls close and shall be continuous until completed.

(2)   Vote counting at the precinct shall be conducted with the participation of precinct officials of all political parties then present. Vote counting at the county board of elections shall be conducted in the presence or under the supervision of board members of all political parties then present.

(3)   Any member of the public wishing to witness the vote count at any level shall be allowed to do so. No witness shall interfere with the orderly counting of the official ballots. Witnesses shall not participate in the official counting of official ballots.

(4)   Provisional official ballots shall be counted by the county board of elections before the canvass. If the county board finds that an individual voting a provisional official ballot is not eligible to vote in one or more ballot items on the official ballot, the board shall not count the official ballot in those ballot items, but shall count the official ballot in any ballot items for which the individual is eligible to vote.

(5)   Precinct officials shall provide a preliminary report of the vote counting to the county board of elections as quickly as possible. The preliminary report shall be unofficial and has no binding effect upon the official county canvass to follow.

(6)   In counties that use any certified mechanical or electronic voting system, subject to the sample counts under G.S. 163-182.1 and subdivision (1a) of subsection (b) of this section, and of a hand-to-eye recount under G.S. 163-182.7 and G.S. 163-182.7A, a board of elections shall rely in its canvass on the mechanical or electronic count of the vote rather than the full hand-to-eye count of the paper ballots or records. In the event of a material discrepancy between the electronic or mechanical count and a hand-to-eye count or recount, the hand-to-eye count or recount shall control, except where paper ballots or records have been lost or destroyed or where there is another reasonable basis to conclude that the hand-to-eye count is not the true count.

(b)   The State Board of Elections shall promulgate rules for the initial counting of official ballots. All election officials shall be governed by those rules. In promulgating those rules, the State Board shall adhere to the following guidelines:

(1)   For each voting system used, the rules shall specify the role of precinct officials and of the county board of elections in the initial counting of official ballots.

(1a)   For optical scan and direct record electronic voting systems, and for any other voting systems in which ballots are counted other than on paper by hand and eye, those rules shall provide for a sample hand-to-eye count of the paper ballots or paper records of a sampling of a statewide ballot item in every

county. The presidential ballot item shall be the subject of the sampling in a presidential election. If there is no statewide ballot item, the State Board shall provide a process for selecting district or local ballot items to adequately sample the electorate. The sample chosen by the State Board shall be of full precincts, full counts of absentee ballots, and full counts of one-stop early voting sites. The size of the sample of each category shall be chosen to produce a statistically significant result and shall be chosen after consultation with a statistician. The actual units shall be chosen at random. In the event of a material discrepancy between the electronic or mechanical count and a hand-to-eye count, the hand-to-eye count shall control, except where paper ballots or records have been lost or destroyed or where there is another reasonable basis to conclude that the hand-to-eye count is not the true count. If the discrepancy between the hand-to-eye count and the mechanical or electronic count is significant, a complete hand-to-eye count shall be conducted.

    (2)   The rules shall provide for accurate unofficial reporting of the results from the precinct to the county board of elections with reasonable speed on the night of the election.

    (3)   The rules shall provide for the prompt and secure transmission of official ballots from the voting place to the county board of elections.

The State Board shall direct the county boards of elections in the application of the principles and rules in individual circumstances."

SECTION 5.(c) G.S. 163-182.5 reads as rewritten:

"**§ 163-182.5. Canvassing votes.**

(a)   The Canvass. – As used in this Article, the term "canvass" means the entire process of determining that the votes have been counted and tabulated correctly, culminating in the authentication of the official election results. The board of elections conducting a canvass has authority to send for papers and persons and to examine them and pass upon the legality of disputed ballots.

(b)   Canvassing by County Board of Elections. – The county board of elections shall meet at 11:00 A.M. on the seventh day after every election to complete the canvass of votes cast and to authenticate the count in every ballot item in the county by determining that the votes have been counted and tabulated correctly. If, despite due diligence by election officials, the initial counting of all the votes has not been completed by that time, the county board may hold the canvass meeting a reasonable time thereafter. The canvass meeting shall be at the county board of elections office, unless the county board, by unanimous vote of all its members, designates another site within the county. The county board shall examine the returns from precincts, from absentee official ballots, from the sample hand-to-eye paper ballot counts, and from provisional official ballots and shall conduct the canvass.

(c)   Canvassing by State Board of Elections. – After each general election, the State Board of Elections shall meet at 11:00 A.M. on the Tuesday three weeks after election day to complete the canvass of votes cast in all ballot items within the jurisdiction of the State Board of Elections and to authenticate the count in every ballot item in the county by determining that the votes have been counted and tabulated correctly. After each primary, the State Board shall fix the date of its canvass meeting. If, by the time of its scheduled canvass meeting, the State Board has not received the county canvasses, the State Board may adjourn for not more than 10 days to secure the missing abstracts. In obtaining them, the State Board is authorized to secure the originals or copies from the appropriate clerks of superior court or county boards of elections, at the expense of the counties."

SECTION 5.(d) This section becomes effective January 1, 2006.

SECTION 6.(a) G.S. 163-182.7 reads as rewritten:

"**§ 163-182.7. Ordering recounts.**

(a)   Discretionary Recounts. – The county board of elections or the State Board of Elections may order a recount when necessary to complete the canvass in an election. The county board may not order a recount where the State Board of Elections has already denied a recount to the petitioner.

(b)   Mandatory Recounts for Ballot Items Within the Jurisdiction of the County Board of Elections. – In a ballot item within the jurisdiction of the county board of elections, a candidate shall have the right to demand a recount of the votes if the difference between the votes for that candidate and the votes for a prevailing candidate is not more than one percent (1%) of the total votes cast in the ballot item, or in the case of a multiseat ballot item not more than one percent (1%) of the votes cast for those two candidates. The demand for a recount must be made in writing and must be received by the county board of elections by 5:00 P.M. on the first day after the canvass. The recount shall be conducted under the supervision of the county board of elections.

(c) Mandatory Recounts for Ballot Items Within the Jurisdiction of the State Board of Elections. – In a ballot item within the jurisdiction of the State Board of Elections, a candidate shall have the right to demand a recount of the votes if the difference between the votes for that candidate and the votes for a prevailing candidate are not more than the following:

    (1) For a nonstatewide ballot item, one percent (1%) of the total votes cast in the ballot item, or in the case of a multiseat ballot item, one percent (1%) of the votes cast for those two candidates.

    (2) For a statewide ballot item, one-half of one percent (0.5%) of the votes cast in the ballot item, ~~or in the case of a multiseat ballot item, one-half of one percent (0.5%) of the votes cast for those two candidates,~~ or 10,000 votes, whichever is less.

The demand for a recount must be in writing and must be received by the State Board of Elections by noon on the second Thursday after the election. If on that Thursday the available returns show a candidate not entitled to a mandatory recount, but the Executive Director determines subsequently that the margin is within the threshold set out in this subsection, the Executive Director shall notify the eligible candidate immediately and that candidate shall be entitled to a recount if that candidate so demands within 48 hours of notice. The recount shall be conducted under the supervision of the State Board of Elections.

(d) Rules for Conducting Recounts. – The State Board of Elections shall promulgate rules for conducting recounts. Those rules shall be subject to the following guidelines:

    (1) The rules shall specify, with respect to each type of voting system, when and to what extent the recount shall consist of machine recounts and hand-to-eye recounts. <u>Hand-to-eye recounts shall also be ordered as provided by G.S. 163-182.7A.</u>

    (2) The rules shall provide guidance in interpretation of the voter's choice.

    (3) The rules shall specify how the goals of multipartisan participation, opportunity for public observation, and good order shall be balanced."

    SECTION 6.(b) Article 15A of Chapter 163 of the General Statutes is amended by adding a new section to read:

"**§ 163-182.7A. Additional provisions for hand-to-eye recounts.**

    <u>(a) The rules promulgated by the State Board of Elections for recounts shall provide that if the initial recount is not hand-to-eye, and if the recount does not reverse the results, the candidate who had originally been entitled to a recount may, within 24 hours of the completion of the first recount, demand a second recount on a hand-to-eye basis in a sample of precincts. If the initial recount was not hand-to-eye and it reversed the results, the candidate who had initially been the winner shall have the same right to ask for a hand-to-eye recount in a sample of precincts.</u>

    <u>That sample shall be all the ballots in three percent (3%) of the precincts casting ballots in each county in the jurisdiction of the office, rounded up to the next whole number of precincts. For the purpose of that calculation, each one-stop (early) voting site shall be considered to be a precinct. The precincts to be recounted by a hand-to-eye count shall be chosen at random within each county. If the results of the hand-to-eye recount differ from the previous results within those precincts to the extent that extrapolating the amount of the change to the entire jurisdiction (based on the proportion of ballots recounted to the total votes cast for that office) would result in the reversing of the results, then the State Board of Elections shall order a hand-to-eye recount of the entire jurisdiction in which the election is held. There shall be no cost to the candidate for that recount in the entire jurisdiction.</u>

    <u>(b) Recounts under this section shall be governed by rules adopted under G.S. 163-182.7(d).</u>

    <u>(c) No complete hand-to-eye recount shall be conducted under this section if one has already been done under another provision of law.</u>"

    SECTION 6.(c) This section becomes effective January 1, 2006.

    SECTION 7. G.S. 163-82.28 reads as rewritten:

"**§ 163-82.28. The HAVA Election Fund.**

    There is established a special fund to be known as the Election Fund. All funds received for implementation of the Help America Vote Act of 2002, Public Law 107-252, shall be deposited in that fund. The State Board of Elections shall use funds in the Election Fund only to implement ~~HAVA.~~ <u>HAVA and for purposes permitted by HAVA to comply with State law.</u>"

    SECTION 7.1. Each county shall receive a grant of up to twelve thousand dollars ($12,000) per polling place and one-stop site from the Election Fund created under G.S. 163-82.28 for voting equipment that complies with the requirements of HAVA and this act. The grant shall also include two backup units per county. Each county shall also receive a grant equal to one dollar ($1.00) per voter in the 2004 presidential election, but no less than ten thousand dollars ($10,000) or more than one hundred thousand dollars ($100,000), for central administrative software for tabulation.

    SECTION 8. The State Board of Elections shall recommend a model code of ethics for members and employees of county boards of elections and of the State Board of Elections. The code shall address the appropriate relations between

those members and staff and vendors who do business or seek to do business with boards of elections in North Carolina. It shall address how to avoid both the reality and the appearance of conflicts of interest and impropriety. The State Board shall report its recommended code to the Joint Select Committee on Electronic Voting Systems and to the Joint Legislative Commission on Governmental Operations no later than 60 days after this act becomes law.

SECTION 9. The State Board of Elections may conduct, for primaries and elections in 2006 only, experiments with voting systems that use a means in addition to paper to fulfill the backup record and voter verification requirements of G.S. 163-165.7(a)(4) and G.S. 163-165.7(a)(5), as enacted by this act. The pilot program may be conducted in no more than nine counties. The county boards of elections shall cooperate in conducting the pilot program. The pilot program shall be conducted according to the following requirements:

(1) The experiment may be conducted in no more than two voting sites per county. The voting sites may include election-day voting places or one-stop sites.

(2) At each voting site in which the experiment is conducted, voters must have a choice of voting on the experimental voting system or on a voting system that is not part of the experiment.

(3) Each experimental voting system shall include an additional means for the voter to verify the choices that the voter makes in the electronically cast ballot, which means shall also provide for an additional count. That additional means may utilize audio technology, digital scanners, or some other material or technology that shall record the voters' choices but shall not record any image of any part of the voter.

(4) On each voting machine or unit used in the experiment, the voting system shall comply with all the applicable requirements of G.S. 163-165.7, including the requirement in G.S. 163-165.7(a)(4) that a DRE system must generate a paper backup record of each individual vote cast electronically and the requirement in G.S. 163-165.7(a)(5) that the paper record generated by the DRE system must be viewable by the voter before the vote is cast electronically and that the system allow the voter to correct any discrepancy between the electronic vote and the paper record before the vote is cast. On every machine or unit, the experimental means to fulfill those functions shall be used in addition to, rather than instead of, the required paper means.

(5) For all votes cast on an experimental voting system under the pilot, there shall be, in addition to an electronic count, a full hand-to-eye paper count and a full comparison count of the experimental verification technology.

The State Board of Elections shall report the results of the pilot program, together with its recommendations, to the 2007 General Assembly and to the Joint Legislative Commission on Governmental Operations by February 1, 2007.

SECTION 10. The requirement for testing a voting system in an election provided in G.S. 163-165.9(a)(3), as enacted in Section 4 of this act, does not apply to any voting system acquired before January 1, 2008, as long as the voting system is demonstrated in a public forum in the county. Notwithstanding G.S. 163-132.5G, as amended by this act, voting data by precinct shall be reported for the general elections of 2006 by March 1, 2007, and for the primary elections of 2006 by May 1, 2007. Except as otherwise provided in this act, the remainder of this act is effective when it becomes law.

In the General Assembly read three times and ratified this the 16th day of August, 2005.

s/ Marc Basnight

President Pro Tempore of the Senate

s/ James B. Black

Speaker of the House of Representatives

s/ Michael F. Easley

Governor

Approved 11:00 a.m. this 26th day of August, 2005