Public Hearing Testimony: Mary Kiffmeyer, Secretary of State, Minnesota - 06/03/04

Testimony of
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Best Practices to Protect Every Vote: Precinct Optical Scan Systems

Overview

The use of optical scan precinct tabulators is in itself a "best practice" in the State of Minnesota.

Minnesota will meet the requirements of HAVA Title III by expanding its use of precinct optical scan tabulators while adding accessible equipment in each polling place to permit voters with disabilities to vote privately and independently on optical scan ballots.

Minnesota believes optical scan precinct counters can be used in conjunction with adequate certification standards, comprehensive testing, extensive election administrator and election worker training, and safeguarding procedures to ensure that elections in Minnesota reflect with accuracy the votes marked by voters on paper optical scan ballots. In optical scan voting, the ballot itself is voter verified, and remains available for post-election audits and recounts.

Currently in Minnesota, ballots are counted by one of three methods—traditional hand-counting, precinct tabulation of optical scan ballots, and central count of optical scan ballots. Of these three, only precinct tabulation permits the "second chance" voting that identifies ballots with errors so they may be returned to the voter for review and correction before the ballot is finally submitted. This is especially important in Minnesota's partisan primaries in which voters often invalidate votes by casting them for candidates in more than one political party.

Because of the inherent advantage to the voter of second-chance voting, Minnesota has been moving toward increased use of optical scan precinct tabulation. Grants provided by the Minnesota legislature and administered by the Minnesota Secretary of State and the Minnesota Department of Administration provided more than $1 million for the purchase of optical scan precinct tabulators in over 60 jurisdictions in Minnesota in 2002, including some county-wide upgrades.

Such is the commitment in Minnesota to optical scan precinct tabulation.

A key to Minnesota's commitment to optical scan precinct tabulation comes from the recognition that best practices in proper certification, thorough verifiable and repeatable system testing, election worker training, and standardized safeguarding procedures can ensure accuracy and integrity of our election system, and will lead to public confidence in this voting system.

Adequate Certification

Federal

Any application to certify an electronic voting system in Minnesota requires prior certification that the 2002 Federal Election Commission voting system standards have been met. No application is complete without such certification by a qualified independent testing authority (ITA). This certification is accompanied by the ITA report of its testing, comments, and conclusions which are reviewed by the Minnesota Secretary of State's Office.

The required outcome is a finding of accurate, reliable system performance. However, this is not sufficient in itself. That performance must also meet the requirements of Minnesota election law.

State

The voting system certification process is designed to determine if the system performance meets Minnesota election requirements, and to reaffirm system reliability and accuracy.

Initial application for certification has 12 required content areas (see attachment 1). In addition to certification of federal compliance by an ITA, these include complete specifications for hardware, firmware, and software and all related technical manuals and system documentation. The vendor may volunteer additional information if desired. The Secretary of State's Office may request additional information if the initial application is not sufficient.

After the complete application has been received and reviewed, the system is subject to an acceptance demonstration. During this demonstration over 22 individual criteria are assessed as required in law (see attachment 2).

Secretary of State Staff then compiles their assessment of the 12 content areas of the application, and the 22 criteria assessed during the acceptance demonstration. The resulting report and recommendation are then presented to the Secretary for a decision to proceed with certification or not.

If certification proceeds, the vendor will be asked to provide the certifications, escrow of programs, documentation and source codes, bonding, and payment of certification costs presented in Attachment 3. Once these requirements are fulfilled, the system certification will be issued, although the Secretary has discretion to attach conditions.

After an electronic voting system has been certified, the software necessary to operate the voting system, tabulate votes, and prepare ballot styles must be reexamined and recertified by the Secretary of State (or an independent testing authority approved by the Secretary) at least once every four years and at any time that, in the opinion of the secretary of state, the voting system no longer complies with Minnesota election law. The certification or approval of a significant change to a voting system's software satisfies the requirements of this part.

The secretary of state may waive the reexamination and reapproval requirement in this part if no changes have been made to a voting system's software or if the software continues to operate in conformance with Minnesota election law.

Comprehensive Voting System Testing

Minnesota requires all equipment to be used in an election to undergo logic and accuracy testing. Minnesota conducts its logic and accuracy testing in two phases: Preliminary Testing which tests the counting of offices and precincts for each ballot style, and Public Accuracy Testing which is the public demonstration of the accuracy of the preliminary testing. Before this, many jurisdictions will also conduct local diagnostic testing. In this test, items such as unit battery, modem phone numbers, write-in ballot sorters, and system peripherals such as printers are tested. This confirms the mechanical and electronic function of hardware and the compatibility of peripherals components.

Local Preliminary Testing:

Preliminary testing is conducted using pre-audited vote configuration spreadsheets for each ballot style and "test decks"—ballots marked to exactly match the columns in the spreadsheets. Test deck ballots are run through each precinct tabulator and must result in totals that exactly match pre-determined results.

In addition to logic and accuracy test training provided by vendors, the State of Minnesota also conducts county training in ballot and equipment testing. The state uses this time to underscore the importance of thorough and accurate testing that complies with state election law, and that goes beyond typical vendor testing protocols. Minnesota trains its jurisdictions to create full test decks that thoroughly test every office and question on every ballot style, and to not rely merely on vendor-provided test decks. In addition, jurisdictions are taught to create additional test decks for each ballot print run. This is important because errors in printing calibration can cause tabulation failure, even when the precinct tabulation equipment has tested accurately on other ballots. Jurisdictions are also trained to test ballots in all orientations, and to test variables including marking pens and various stray marks and folds. Testing should be conducted

using both the precinct memory unit and duplicate back-up memory unit for each precinct on the actual optical scan tabulator scheduled to be used on Election Day.

Procedures for preliminary testing are outlined in state rule, and include safeguarding procedures. Errorless tests are required to be run on all memory units with equipment, and certification to this effect is required of the jurisdiction conducting the testing. At the close of testing, original memory units are sealed into tabulators, and other materials, including results tapes, pre-determined vote configurations, and test decks are also sealed. Duplicate back-up memory units must be sealed and stored in a separately. All seal numbers are officially recorded.

Local Public Accuracy Testing:

Public Accuracy testing must be held during the fourteen days prior to an election. Published and posted notice must be made of the time and location of the test.

One purpose of the test is to verify the accuracy of the completed preliminary testing. To this end, the certificate of preliminary testing is made part of the record of the public accuracy test.

Another purpose of the test is to instill public confidence in the election system being used by demonstrating accuracy, transparency, fairness, and safeguarding procedures to candidates, the press, representatives of political parties, and members of the community in general.

The test deck and pre-audited vote configurations used for the public accuracy test must be those used for the preliminary testing, and again must result in errorless results. Minnesota requires no fewer than three precincts be publicly tested, and requires at least once precinct be tested for each district office on the ballot. Election Judges of different political parties are required to witness the test. After the test, all materials that have been opened are resealed. Test results and seal numbers are certified by the official conducting the test, and the certification is signed by the witnesses.

Statewide Training

Successful election practices depend on people who are adequately trained as election administrators and poll workers. The best hardware, firmware, and software in the world can be rendered worthless in the hands of individuals who haven't been shown how to turn the machine on or to properly integrate it into the lawful conduct of their Election Day duties.

As mentioned earlier, Minnesota voting systems are transitioning to precinct optical scan voting systems from central counted optical scan systems and hand-counted paper ballots.

In areas that have been using central count systems, ballots are typically brought to a county counting center. Local clerks who are administering polling places in their

jurisdiction have little or no experience with the counting of ballots, nor do the workers in individual polling places. However, they are familiar with the preparation and use of optical scan ballot cards.

In areas that have been using hand count systems, local clerks and workers in the polls are familiar with counting, reporting and securing of ballots and election materials. However, they have no experience with optic scan ballots or operation of the voting equipment.

In neither case are local officials familiar with the vital pre-election testing procedures (e.g., test deck preparation or Public Accuracy Test) or the proper post election security of precinct optical scan systems.

Each of these transitions to precinct optic scan systems presents important training challenges.

In the year 2000 Minnesota initiated among the first mandatory, comprehensive training and certification programs for election administrators at all levels of government, and for every worker in the polling place. Not just for statewide or national elections, but for *every* election throughout the state during the year. Once trained and certified, each official must continue training to maintain their certification for subsequent 2 year periods.

Voting equipment is specifically called out as one of the training subjects.

While the Secretary of State's Office directly trains administrators in each of Minnesota's 87 counties, the Secretary also supports their training of approximately 2,400 clerks in cities, townships, and school districts and of over 35,000 polling place workers (called "Election Judges" in Minnesota).

Training materials from voting equipment providers are integrated into local training that is typically very "hands on" well before Election Day. Further collaborative training programs have been developed county, city, township, and school associations to provide abundant opportunities for training applicable to being "certified" as an election administrator and/or poll worker.

Extensive collaboration among several levels of government, equipment providers, statewide associations and the Minnesota Secretary of State's Office fosters a solid statewide level of readiness to make the best use of certified for use in our polling places.

Separately, publications, web postings, and public demonstrations of equipment foster voter familiarity with these systems as they become more commonplace.

Standardized Practices in Minnesota

In Minnesota, optical scan ballots must be ready for absentee balloting no later than thirty days prior to the election. Because optical scan ballots are printed paper ballots, errors in candidate names of offices can cause costly reprints. Ballot errors may be avoided by early and careful proofreading of ballot information; however, because the timeframe to produce the ballots is short, errors can still occur.

In order to dramatically improve ballot printing turn around time and reduce errors, Minnesota has instituted a system of electronic transfer of ballot information directly from its statewide candidate filing and election management system directly to equipment and ballot vendors. Counties in Minnesota must enter candidate information into the statewide system as filings occur. Filing information is then displayed from this system onto the Minnesota Secretary of State web site, where candidates and others view the information. Data from the filing system need not be retyped or independently sent to equipment and ballot vendors, resulting in faster, more reliable ballot printing turnaround. And, because the candidate filing and election management system also assigns the candidate numbers needed for electronic results reporting to the state after the election, there is increased likelihood of early successful testing of results reporting. When test uploads are sent using the results of preliminary testing done with test decks, testing comes full circle when pre-audited totals are reported in test abstracts and other results reports.

Other statewide standardized procedures also safeguard election integrity. The form of the optical scan ballot is strictly prescribed by Minnesota election law; layout, font sizes and case, voter instructions, office names, order of candidates and parties, and all other ballot elements, are standardized. In addition, the state provides an example optical scan ballot for state elections which must be followed by all counties.

Other certifications contribute to the transparency of the optical scan process. For example, judges in the polling place verify that the seal numbers on precinct tabulators match those on the precinct certification. Any seal broken during the day is noted and its replacement seal number recorded. The form of the summary statements for precincts using optical scan equipment is also prescribed by law, as are certifications used for to ballot accounting.

Election Day and After

While it is standard practice to prepare for repairs and the need for experts during Election Day, it is equally important to be prepared for what may occur after the election as well. In Minnesota, maintaining a "chain of custody" of ballots, and all election materials, including voting equipment, firmware, and software is vital to resolving any post election challenge with confidence.

Conclusion

Selecting optical scan precinct voting equipment is itself an initial "best practice", especially when combined with:

- adequate certification procedures (including periodic review);
- comprehensive local tests of the hardware, firmware, software and ballots;
- uniform statewide training of election officials and poll workers; and
- Standardized procedures including the automated populating of ballot information from Minnesota's Candidate Filing and Election Management system.

While it is understandable that discussion often has focused on the technical issues associated with the voting equipment itself, it is these additional best practices that ensure the integrity of the election process and protect every vote cast.