U.S. SENATE COMMITTEE ON RULES AND ADMINISTRATION - HEARING ON SECURITY AND RELIABILITY OF ELECTRONIC VOTING

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Thank you for the opportunity to appear before you today to offer testimony on the issue of accuracy, reliability and security of electronic voting equipment. My name is Conny McCormack and I have 25 years of experience as a County election official. For the past 11+ years, I have served as the Registrar-Recorder/County Clerk for Los Angeles County, California, which is the largest electoral jurisdiction in the U.S. with more than four million registered voters and 5,000 voting precincts. Previously I served as Registrar of Voters in San Diego County, California for more than seven years and, prior to that, as Elections Administrator in Dallas, Texas for six years. For the November 2, 2004 Presidential Election a record-high 3,085,582 voters cast ballots in Los Angeles County, a 79% voter turnout. This constituted more ballots than were cast statewide in 41 of the 50 states.

My remarks today will focus primarily on the reasons why I believe that adding another federal requirement for Direct Recording Electronic (DRE) voting systems to be retrofitted with a voter verified paper audit trail (VVPAT) component invites a number of problems. My opinion on this issue is based on both my personal experience with DREs equipped with VVPAT and similar factual evidence that has been compiled from other electoral jurisdictions across the U.S. that deployed DREs with VVPAT for the 2006 elections.

For background, Los Angeles County began the process of introducing DRE technology to voters over six years ago in conjunction with the November 2000 election. Our initial use of DREs for that election, and for subsequent federal and statewide elections over the ensuing six years, occurred in conjunction with the "early voting" period prior to election day. Each DRE has the capacity to hold all 3,000+ separate and distinct ballot combinations for Los Angeles County's most complex ballot. Therefore, electronic voting equipment is the only technology that provides our County's voters with the flexibility of going to any of the early voting sites prior to election day, if they so choose.

Our survey responses continually show that voters overwhelmingly express great enthusiasm for voting on the electronic equipment. Survey data compiled from voters' responses in other counties and states using DRE technology also reveal high voter satisfaction. Additionally and significantly, with the most complex ballot in the U.S., we have experienced no technical problems with the tabulation of votes with the DRE equipment. Electronic voting has proven to be reliable, accurate and well-accepted by our voters.

It goes without saying that all members of Congress seek the same overriding goal for election administration – the accurate casting, tabulation and reporting of all votes in accordance with the voters' intentions. The fact is that existing DRE systems have the proven record of doing the best job of all available voting systems in achieving that goal. This should come as no surprise. It is the very reason why modern society continually and progressively relies less upon manual processes and paper records and more upon computers and electronic storage to manage myriad aspects of our lives.

The suppositions and theories espoused by critics contending that DRE systems are more susceptible to tampering are not based on evidence. It is most unfortunate that the argument has become strident and emotion-laden without regard for the facts. By contrast, there is ample, documented evidence that fraud has been perpetrated with paper-based voting systems.

Because everyone agrees that the end objective of every election, regardless of the voting technology used, is to have accurate election results that truly reflect the voters' choices, the primary objective of my testimony today is to provide information to separate facts from myths.

The facts include:

- DREs are self-contained units unconnected to the Internet or any other wide-area network
- DRE systems are tested at the federal and state levels
- DREs undergo extensive, rigorous acceptance testing by local jurisdictions
- DREs undergo further pre and post election public testing prior to each use
- DREs have redundant memory medium and include the capacity to print ballot images for recount/auditing purposes
- DREs have back-up battery capacity in the event of power outage
- DRE source code software is placed in escrow by most States' chief electoral officer

FACT: Each electronic voting machine is a stand alone unit, not networked or connected to the Internet. A report issued prior to the November 2006 Election, by Edward Felten, Ariel J. Felman and J. Alex Halderman of Princeton University, left the erroneous impression that an individual electronic voting unit could be compromised in such a way as to infect equipment at other voting precincts. However, when delving into the details of the report, the authors admit that the only way to alter vote totals in a comprehensive, systemic manner is via the central computer that accumulates the vote totals from the stand alone DRE units.

Suspicion regarding computerized vote counting is anything but new. It has been present since computers first became widely utilized in vote counting beginning in the 1960s. When Los Angeles County changed from hand counted paper ballots to computerized vote tallies, an article ran in *The Los Angeles Times* in April 1968 which included the following statement: "Most agree that there is a growing number of computer experts knowledgeable enough to devise ways of modifying the program so as to alter the vote count." Almost forty years later, the rhetoric has not changed, despite mounds of evidence that computerized vote tabulation is by far more accurate than hand tallies of paper ballots, especially in large electoral jurisdictions.

FACT: When presented with an optical scan, paper ballot, some voters in every election inevitably mis-mark the ballot in such a way that the scanning equipment cannot pick up the intended mark, i.e. by circling the candidate's name or making a check mark next to the name instead of marking in the designated space. Additionally, some voters mark

their ballots in such a way that it is unclear what they intended. A key rationale to change from paper-based ballot voting systems (whether punch card or optical scan) to electronic is elimination of this ambiguity.

All of us saw such ambiguity in the spotlight following the November 2000 election when punch card ballots were being examined through magnifying glasses in Florida. Similar individual ballot determinations are made all over the U.S. when recounts occur and close electoral contests are scrutinized. Because electoral results inevitably differ somewhat following such recounts of paper-based systems, people are critical of the process and suspicious of the reliability of the results. Electronic balloting removes the subjective nature of another individual attempting to determine the intent of voters. Ironically, criticism and mistrust has emerged with regard to recounts of electronic systems - which compare electronic results to results produced by generating paper copies from DRE ballot images - precisely because the results exactly match.

FACT: Of all voting systems, electronic voting equipment has the best record of reliably counting the votes accurately. Several years ago, California's Secretary of State made the decision to hire independent technical consultants to conduct parallel monitoring tests on Election Day of all electronic voting systems used in the State. Parallel monitoring supplements the multiple pre-election testing and certification processes. It tests voting equipment during true conditions that simulate actual voting during the 13 hours of Election Day. For example, if malicious computer code were present in the equipment such that it would only activate on Election Day, it would be detected during parallel monitoring.

Significantly, in every statewide election in which parallel monitoring tests have been conducted, the results reveal 100% accuracy of the electronic voting equipment. These parallel monitoring tests occurred under both a Democratic Secretary of State in conjunction with the March 2004 Presidential Primary Election and a Republican Secretary of State with regard to the November 2006 General Election.

FACT: When VVPATs are attached to electronic voting equipment, the vast majority of voters do not compare the voting choices they made on the screen with the choices printed on the VVPAT. A visual portrayal of voters ignoring the printed record of their DRE votes was captured on videotape in an 11-minute DVD produced by my office (copies have been provided to your Committee as a component of my testimony). While, to my knowledge, there have not been studies to determine why most voters do not examine the VVPAT, numerous voter surveys reveal a high degree of satisfaction and confidence in the electronic voting equipment they used. Both this video, and reports from many other jurisdictions, confirm that while VVPAT has been highly promoted and heavily lobbied, very few voters even glance at the paper printout. The most commonly observed and reported voter behavior involved voters asking "why can't I take the printed 'receipt' with me?"

FACT: A number of states have recently enacted laws requiring VVPATs to be attached to electronic voting equipment. Reviewing the VVPAT experience from several states is valuable to determine lessons learned. The key finding in all VVPAT experiences is not surprising, i.e. that VVPAT printers, subjected to continuous usage for 12-13 hours, occasionally jam. Such jams cause print overlap in such a way as to make some of the voters' choices illegible (see Attachment A for examples of VVPAT printer jams from Los Angeles County's November 2006 election).

In those states where the VVPAT is only used as a supplemental auditing tool, such as in Nevada and North Carolina, such paper jams are not as significant. However, in those states, such as California, where laws have been passed requiring the VVPAT to become the ballot of record in the event of a recount, the unintended consequence will be the antithesis of accuracy. For example, in a recount of a close election contest, VVPAT paper jam(s) will result in votes, that were successfully cast and recorded electronically. being discarded. This will occur despite the ability to prove that the number of voters who signed-in to vote match the number of electronic ballots cast. Therefore, the electronic votes that were not legibly duplicated on VVPAT paper due to a paper jam, lack of ink or toner or the loss of the paper record would be discarded. Voters caught in this situation would be categorically disenfranchised even though the intent of the voter is clearly known, electronically recorded and preserved. In such a scenario, the result will be knowingly inaccurate vote totals and disenfranchisement of those unfortunate voters who fall into this category.

I have attached to my testimony two reports that illustrate the problems when, due to inevitable paper jams, the VVPAT results do not exactly match the electronic vote totals. The first report (see Attachment B) describes the results of a manual (VVPAT) to machine count comparison of vote results from a randomly selected 5% of the electronic voting units used in Los Angeles County during the November 2006 election. The second report (Attachment C) reveals VVPAT printer problems in the November 2006 in counties in North Carolina. Additional North Carolina data (Attachment D) documents a substantially larger divergence between the machine counts and manual counts for optical scan ballots than for DRE/VVPAT systems.

Currently, Congressman Rush Holt's bill mirrors California's language with regard to requiring the VVPAT to be as the ballot of record. In light of the solid evidence of paper jams rendering some VVPAT copies unreadable, I strongly urge reconsideration of this provision.

FACT: Adding complexity to voting equipment translates into more problems for precinct-level pollworkers. With the understanding that a picture is worth 1,000 words, I have provided your Committee with a copy of a 4-minute DVD that dramatically illustrates the challenges pollworkers face when attempting to attach a VVPAT printer to a DRE. This video was taken on Election Day as voting was about to commence for the first HAVA election in the U.S., the April 11, 2006 special election in San Diego County, California for the 50th Congressional District vacancy.

FACT: Local election officials recognize that all aspects of election security, including securing and maintaining rigorous chain of custody of all voting supplies and equipment, are vital. A crucial component of maintaining appropriate chain of custody and accountability lies with citizen pollworkers who oversee the election at the precinct level. Pollworkers are the backbone of our democracy; more than one million Americans serve honorably in this capacity for every major election in the U.S. Across the country pollworkers either pick up the voting equipment, ballots and supplies several days/weeks in advance of each election or it is delivered to their homes or to polling places.

Attacks are now being leveled at election jurisdictions, including Los Angeles County, where pollworkers take custody of election equipment and supplies in advance of Election Day and then transport the supplies and equipment to their assigned voting location on Election Day. Distributing secured and sealed voting equipment and supplies to lead pollworkers, who have taken an oath to uphold the integrity of the elections process, is an appropriate, effective, accountable and transparent practice that greatly contributes to the successful conduct of elections. For Los Angeles County, with 5,000 voting precincts, this model provides the greatest assurance that the voting locations will prepared to serve the voters when the polls open. We have learned through experience that when lead pollworkers follow through with their commitment to pick up election supplies and equipment prior to election day, that proves the best indicator of their readiness and willingness to show up and serve. The California Association of Clerks and Election Officials recently issued a one-page position paper fully describing the security and appropriateness of this practice (see Attachment E). Incredibly, proposals are now being discussed, without a scintilla of evidence of pollworker malfeasance, to ban this effective practice, including a provision to that effect in the current Holt bill.

FACT: Ballot design can have significant impact on voter behavior. The "butterfly ballot" is but one example of unintended consequences from placement of candidates' names/contests on ballots. Other examples abound including findings of inordinately high under-voting (i.e. skipping a contest) of more than 10% in high profile electoral contests (see Attachment F).

Two Los Angeles County examples are illustrative:

1) In the 1976 election, ballot design was blamed for a drop-off of more than 300,000 votes (a 13.8% under-vote) between the votes cast for President and for the U.S. Senate, while in the rest of California the total vote for Senate exceeded that for President. In Los Angeles County the ballot layout showed that there was significant white space (blank space) between the contest for President at the top of the first page and the contest for U.S. Senate which was placed at the bottom of that same page.

2) In the 2003 California Governor's Recall Election, a stark difference in under-voting on the YES/NO Recall question emerged depending on which voting system the voter used. Of the voters who cast their ballots on the optical scan system, 8.74% skipped the YES/NO question - even though it was listed in larger

print at the very top of the page - and went straight to the list of candidates for Governor. By contrast, only 1/3 of a percent (.034%) of voters in Los Angeles County who cast ballots on the DRE voting system for that same election skipped the YES/NO question. Ballot design clearly impacted voter behavior. (Anecdotally, several voters called me after the election commenting that they had inadvertently missed the YES/NO question when voting on the optical scan system).

Currently, a storm is raging in Sarasota County, Florida with regard to the 13% under-vote in the 13th Congressional District contest in the November 2006 election, compared with other counties in that congressional district. Once again, it appears that problemls with ballot design is the culprit (see Attachment G).

FACT: There are significant costs associated with attaching VVPAT printers to DREs, adding approximately 25% to the initial DRE purchase price. This amount does not take into consideration the ongoing costs to purchase paper for every election and the cost of storage (22 months is required for federal elections) of tens of thousands of VVPATs.

Conclusion

Provisions of HAVA were painstakingly developed and thoroughly assessed to consider the consequences of major new requirements. A key wisdom of HAVA was the 2006 implementation date, thereby allowing a 3+year lead time for implementation. Mandating the changes in the mid-term election cycle allowed adjustments for lessons learned in preparation for the traditionally highest voter turnout election in the four-year cycle, the November Presidential Election. In addition to HAVA, many states mandated additional changes to voting equipment. A number of states have recently instituted a VVPAT requirement, providing the opportunity for observation of the states as laboratories of change.

In summary, overwhelming evidence exists throughout the U.S. that DRE voting systems without VVPAT are accurate, reliable, secure, accessible, easy-to-use, popular with voters and effectively address voting equipment mandates of HAVA. A key lesson I have learned after 25 years in this profession is that elections are fragile. Under the best of circumstances, election administration is a difficult endeavor. Change does not always equal reform. A federal mandate for additional major changes in voting equipment and procedures during the short time remaining prior to the 2008 elections invites significant problems that could de-stabilize election administration. Such problems could, unintentionally, result in erosion of voter confidence in the electoral process, something no one wants.

Conny B. McCormack has accumulated 25 years of experience as the chief elections official of three of the largest counties in the United States: Los Angeles County, California (since 1995); San Diego County, California (1987-1994); and Dallas County,

Texas (1981-1987). Internationally, she has worked as an elections consultant in Nigeria (2004), Indonesia (2001) and Russia (1994 through 1995), and a member of election observation/assessment teams in Mexico (2002, 1994), Yemen (1997) and Armenia (1991). She is the immediate past president of the California Association of Election Officials (2004-2006). She served as a member of the Election Center's Task Force on Election Reform (in 2001 and 2005) which provided input to Congress on development and implementation issues with the Help America Vote Act (HAVA). She is currently a member of the Editorial Advisory Board of the Election Law Journal, a member of the Steering Committee of the *Voices of Reform* project of the Commonwealth Club of San Francisco and a member of the Board of Directors of the Pollworker Institute. She holds degrees in political science from Virginia Polytechnic University (B.A.) and from the University of Miami, Florida (M.A.).