

To: Donna Kelly <kellydon@dol.lps.state.nj.us>
From: Rebecca Mercuri, Ph.D. <mercuri@acm.org>
Subject: NJ Criteria for VVPR for DREs – AG’s April 2, 2007 Draft
Cc: Irene Goldman
Date: May 9, 2007

Dear Ms. Kelly,

I am writing in response to the call for comments regarding the April 2, 2007 draft of the New Jersey Criteria for Voter-Verified Paper Record for Direct Recording Electronic Voting Machines that was posted on the NJ Office of the Attorney General’s website at <http://www.nj.gov/oag/elections/voter_verified_paper_record_criteria.html>. I want to apologize for my delay in getting this comment to you. As you know, I had requested that I be kept in the loop on requests for comments on proposed NJ standards related to voting, particularly those related to voter-verified paper records, and had provided you and various members of your office with my contact information on numerous occasions. Despite this, I did not receive any notification from your office regarding this recent call for comment. I belatedly heard about this draft and call for comment second-hand from colleagues, and have also heard that you accepted some comments after your April 15 deadline. Unfortunately, due to the flooding in April, when my home was adversely affected, and other obligations, I was unable to prepare this comment before now. I hope you will still consider these comments, as they are salient to compliance with the State’s election laws as well as the implementation of remedies in the case against the Attorney General’s Office, et. al., filed by the New Jersey Coalition for Peace Action, et. al.

As you should recall, I had submitted a 3-page comment on August 16, 2006 to you (copy attached), regarding your August 6, 2006 draft of these criteria. My comments, as well as those from numerous other individuals (including some of the plaintiffs in the aforementioned lawsuit) were discussed with you and members of your office, in considerable detail, at the August 16, 2006 meeting conducted by Ingrid Reed at the Rutgers Eagleton Institute of Politics (notice attached) that we all attended. Although some of the suggestions that were made in my document, and certain other concepts articulated at that meeting, appear in your April 2, 2007 draft of these criteria, it is dismaying to note that a considerable number of very important recommendations continue to be ignored.

Specifically, the April draft has not addressed the bulk of my earlier comments as follows:

- Section II. B. 3. b. allows the “Continuous Spool” method for VVPR, which is entirely incapable of preserving the secrecy of the votes cast (see #4 in my August 2006 comments);
- Section IV. C. 5. continues to create a “three strikes you’re out” situation where voters can be electronically disenfranchised by malfunctioning or defective DRE equipment (see #3b in my August 2006 comments).
- Section IV. A. 2. allows that a digital signature be printed on the ballots but does not specifically preclude this signature from being unique such that it can be exploited for voter identification or vote selling (see #5 in my August 2006 comments);
- Section IV. B. continues to require linking of electronic ballot images with the paper records even though these identifiers pose a known method of violating

- voter anonymity (see #5b in my August 2006 comments) and are also the subject of an ongoing patent dispute (see #5c in my August 2006 comments);
- Section V. G. continues to be impossible to comply with (see #6 in my August 2006 comments);
 - Section VI. A. continues to be problematic due to grandfathered uncertified voting equipment presently in use (see #7 in my August 2006 comments);
 - The use of the word “undisclosed” in Section VI. D. continues to be vague (see #8 in my August 2006 comments);
 - Section VIII. E. continues to require only that the paper ballots be machine readable, but not human readable (see #10 in my August 2006 comments);
 - The criteria continues to not include a requirement that the paper record cannot be obscured (such as via a door or cover) during ballot preparation and casting (see #12 in my August 2006 comments).

It is important to note that the April 2007 draft has requirements that unnecessarily go beyond the intention of the New Jersey VVPR legislation. For example, Section IV. A. 5. states that “the paper record shall be created such that its contents are machine readable” and A. 6. states that “the paper record shall contain error correcting codes for the purpose of detecting read errors and for preventing other markings on the paper record from being misinterpreted when the paper record is machine read.” Since the NJ legislation specifically states that the paper records are to be “preserved for later use in any manual audit” there is absolutely no need for the error correcting codes, nor is there any implication that the paper records need to be machine readable. These and other such additional requirements thus create an artificial hurdle for compliance that is not in the State law, and could potentially be used to provide preference for a certain vendor’s products over another’s.

Beyond these comments, and most importantly, is the noted fact that both the August and April drafts of the criteria fail to recognize any type of balloting system, other than DRE with VVPR, as an acceptable configuration for compliance with New Jersey election law. Although Section II. B. 1. of both of your drafts state that the VVPAT/VVPRS “may be designed in various configurations...” your various draft criteria have repeatedly failed to address the possibility of certifying and deploying VVPRS that do not include DREs. Incorrectly, the April draft defines a Voter-Verified Paper Record System as only “a system that includes a printer and storage unit attached to, built into, and/or used in conjunction with a DRE.” Indeed, there are numerous types of VVPRS without DREs that are currently available for purchase, that are federally certified, that meet the HAVA disability requirements, and that would comply with the New Jersey VVPR legislation. To my knowledge, there has never been any reason for New Jersey to disallow the use of voting machines that do not also record the ballots electronically. Such non-DRE VVPRS would include those that directly print out the entire ballot onto paper, or those that print ballot selections onto a pre-printed ballot paper, for subsequent scanning or hand-counting. Unfortunately, these configurations cannot yet be purchased in New Jersey because of the narrowly written criteria that dictate that only DRE-based precinct voting systems (or machines) can be certified.

As well, and as had been discussed at the Rutgers meeting, there is no reason why the Attorney General’s Office should preclude the certification of voting systems that use hand-prepared paper ballots (on pre-printed ballot forms) that are optically scanned at the precincts. As with the non-DRE VVPRS, there do already exist precinct-based optically

scanned balloting systems that are federally certified, and that also meet the disability requirements of HAVA through the addition of an accessible ballot printer (such as those noted in the paragraph above) at each polling site. In fact, these precinct-based optically scanned balloting systems are now the most common form of voting in the United States (used by the majority of counties and voters). Since these precinct-cast ballots would be identical to the optically scanned paper ballots already used throughout New Jersey as motor-voter ballots, emergency ballots, and absentee ballots, these systems will offer cost-savings to the Counties because they eliminate the need for DRE equipment (and their expensive VVPR add-ons) as well as the additional steps necessary for tallying the DRE cartridges. All ballots would be the same style and would simply be optically scanned (or hand-counted for audit and recount purposes). Here again, we find that these systems cannot be purchased in the State, because they have not been certified for precinct use.

Certainly it would not be prudent to attempt to circumvent compliance with the State election laws as well as thwart the implementation of viable remedies in the case against the Attorney General's Office, especially while this matter is being scrutinized by the Court. One must wonder, then, why both the August and April drafts of the VVPR criteria appear to perpetuate the use and adoption of only DRE-based voting systems throughout the state, when it seems that the technology to retrofit the existing DREs will not likely be available in time to satisfy the State's VVPR legislation, especially when factoring in the move-up of the NJ Presidential primary to February 2008. As well, the half-year delay in the release of the second draft of these criteria for comment is unfortunate, especially since various technologies already exist that can provide acceptable voting systems, that are not DRE-based, that will, right now, satisfy the New Jersey VVPR legislation and other related laws. The State's interests in ensuring the security and independent auditability of elections are not well served if the Attorney General's Office invokes the "waiver" clause in the voting legislation as a result of avoidable deficiencies in the VVPRS criteria.

So, as I have before, I am again offering your office my services, on a pro bono basis, in assisting in the prompt composition of a proper set of criteria that allows for the broad range of acceptable VVPR voting methods to be certified in the State. I urge you to communicate with me as soon as possible so that this important document can be corrected, finalized and issued without further delay, thus enabling potentially compliant equipment, with or without DREs, to be reviewed by the NJ examiners. This will also allow the counties to proceed to negotiate purchasing agreements with vendors and seek funding sources, so that the VVPRS will be in place for the 2008 election cycle.

Sincerely,

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Comments on Draft Criteria for New Jersey VVPAT

Rebecca Mercuri, Ph.D.

August 16, 2006

I would like to express profound concerns with numerous aspects of the Draft Criteria for New Jersey VVPAT recently published on the NJ Office of the Attorney General's Division of Elections website. The draft contains many instances of wording and implementation descriptions that are in direct conflict with prior and newly enacted laws pertaining to the state's election equipment. These items must be corrected and rewritten before the Criteria are issued. I will address each matter individually here.

1. P.L. 2005, c. 137 is "an Act requiring that all voting machines produce a voter-verified paper record." Note that the phrase used throughout the Act to describe this paper record is "voter-verified" and not "voter-verifiable." In fact, the word "verifiable" does not appear at all in the legislation. Yet, throughout the Draft Criteria, the phrase "voter-verifiable" is being used. This is a critical and key point. Numerous special interest groups, throughout the United States and clearly also here in New Jersey, have knowingly attempted to change the word "verified" into "verifiable" in the implementations of VVPAT legislation in a subversive effort to erroneously allow the use of technologies that cannot be directly verified by the voters (such as cryptographic ballots). As well, the weaker term "verifiable" lessens the value of the paper record as the ballot of record, one that was intentionally verified and confirmed for accuracy by each voter. Every instance of "verifiable" in the draft must therefore be changed to "verified" in order to be consistent with the wording and intention of the New Jersey statute.

2. The opening sentence of the Draft Criteria has weakened the actual statement that appears in the New Jersey statute, which is as follows: "each voting machine shall produce an individual permanent paper record for each vote cast, which shall be made available for inspection and verification by the voter at the time the vote is cast, and preserved for later use in any manual audit." Specifically, the phrases "individual permanent paper record" and "which shall be made available for inspection and verification by the voter at the time the vote is cast" have been significantly diluted. The first sentence should use the actual wording that is mandated by the New Jersey statute.

3. The description of VVPAT in section I of the Draft Criteria contains a number of serious flaws:

a) The use of the word "permitted" along with "inspect" in the second sentence of the definition, without the addition of "and verify" dilutes the intention and wording of the statute. The entire sentence should be changed to "The paper printout shall be made available for visual and audible inspection and verification of its contents by the voter at the time the vote is cast."

b) The limitation of the VVPAT acceptance and recasting by the voter to only "two times" entirely alters the intention of the VVPAT as a correctly verified ballot of record, and provides the opportunity for a malfunctioning DRE to disenfranchise voters. In its present wording, the Draft Criteria allows for the voting machine to be constructed in such fashion that it could incorrectly print the voter's choices on the paper three consecutive times, after which, the voter is

denied their opportunity to correct and recast the ballot. If such a limitation is desired, there must be some mechanism and procedure established whereby the voter is provided with an opportunity to perform the third rejection and be allowed to cast an emergency ballot without the use of the DRE equipment. This recasting limitation is also described in section IV.C.7. and must be reworded, especially in 7.a and 7.a.3.

4. The statute's requirement of an "individual permanent paper record" specifically disallows the use of the "continuous spool method" that is described in the draft at section II.B.2.b., since spooled paper is not "individual." Nor is the spooled paper method capable of complying with the voter secrecy requirements of R.S.19:48-1(a) and P.L.1973, c.82(C.19:53A-3)(a). Since New Jersey poll workers are required to announce the name and address of each voter as they sign the polling book, the voter's identity is known to all present in the room, including challengers who are able to transcribe the sequence of voters as they enter the voting booths. This public process will necessarily preclude any possibility that the continuous spooled paper can assure that "there shall be no record of which voters used which voting machine or the order in which they voted." Even in Pennsylvania, where the voters' names are not publicly announced, the Secretary of State has deemed that the continuous spool method is inherently a violation of privacy and it has been disallowed. The continuous spool is therefore not a legal method of implementing VVPAT in New Jersey, and must not be recognized as such in any part of the Criteria.

5. The ballot identification requirements that appear throughout section IV of the Draft are extremely problematic:

a) The identifiers on the paper records and electronic ballot images can be used to violate voter privacy and even allow for vote-selling in certain implementations. The specific items in the Draft Criteria where such identifiers are mentioned and could be exploited include the:

- i) "unique identifier" in section IV.A.1.
- ii) barcode and electronic signature in IV.A.2.
- iii) "voting session identifier" in IV.B.1.
- iv) "unique identifier" in IV.B.2.
- v) "digital signature" in IV.B.3

Each of these items must be revised to eliminate any allowance for identifiers.

b) There is no need for identifiers to be used to link the electronic records with the VVPATs, because the VVPATs are the ballots of record, according to the New Jersey statute. (In fact, since they are ballots, the proper name and acronym that should be used in the Criteria is Voter-Verified Paper Ballot or VVPB.) Any discrepancies observed between the paper ballots and electronic images are thus intended to be resolved through the use of the paper ballots. Unique identifiers and digital signatures are not used on emergency, motor-voter and absentee ballots, and thus are similarly not necessary on the VVPATs.

c) The use of ballot identifiers on VVPATs is currently the subject of a patent infringement lawsuit that was filed on June 25, 2006 by Avante International, a New Jersey voting machine company. This lawsuit requests that an injunction be imposed on the VVPAT equipment produced by Diebold, ES&S and Sequoia,

which could require the cessation of their use, recall, and destruction. The Draft Criteria requirement that New Jersey VVPAT implementations include such ballot identifiers could result in there being no VVPAT equipment that is compatible with the existing DREs in the state, until this lawsuit is fully resolved. The NJ Attorney General's Office and Elections Division is strongly advised to look into the ramifications of this lawsuit on the timely implementation of the NJ VVPAT statute. Further details can be found at:

http://www.votetrustusa.org/pdfs/Avante/avante_complaint.pdf

http://www.votetrustusa.org/pdfs/Avante/avante_complaint_exhibit_a.pdf

http://www.votetrustusa.org/pdfs/Avante/avante_complaint_exhibit_b.pdf

6. Section V.4. may be globally impossible to comply with, since DREs can and have malfunctioned in such fashion where they are incapable of suspending their own operations or presenting clear indication of malfunctions. The Criteria needs to be considerably more specific as to the instances where such operating suspension or notification must occur, and how it is to do so.

7. Section VI.A.1.a. requires ITA certification for VVPAT systems. Certain election products used throughout New Jersey have been grandfathered and may not be eligible for updated ITA certification for their VVPAT components. The Criteria should describe the instances where such ITA certification can be temporarily suspended in order that the lack of such certification not be allowed to be used to thwart the VVPAT implementation timeline as required under the New Jersey statute.

8. Section VI.A.1.c. requires that the VVPAT system “not, at any time, contain or use undisclosed hardware or software.” The meaning of “undisclosed” must be more rigorously defined, as it is certainly possible that the VVPAT system may include COTS components whose hardware and software might not be fully disclosable.

9. Section VI.A.4.b. must be modified to allow for the paper records to serve as the official ballots for any recount or audit of an election. The paper ballots must also be allowed to be used to create the initial totals if the electronic records are damaged or unreadable.

10. Section VI.A.4.c. must be modified to allow for the paper ballots to be “machine and human readable for purposes of verification, initial totals, recount and/or audit.”

11. Sections VI.A.4.d, e, and f should be modified to read “the vendor shall include written procedures that are reviewed by the state and publicly posted...” Note that, e. is unnecessary, because the New Jersey statute specifies that discrepancies between the electronic record and paper record are always resolved in favor of the paper record.

12. An item must be added that ensures that the paper record cannot be obscured from the voter's view (such as via a door or cover) during ballot preparation and casting.

I encourage the New Jersey Office of Attorney General's Election Division and other state officials to communicate with me regarding the above suggestions and concerns. I can be reached via email at mercuri@acm.org and phone at 609/587-1886.

Subj: IReed re invitation for VVPAT meeting
Date: 8/9/2006 5:33:40 PM Eastern Daylight Time
From: ireed@rci.rutgers.edu
To: jmatsen@aol.com, marilynaskin@comcast.net, faskin@kinoy.rutgers.edu, goldmani@aol.com, r.harris58@verzion.net, michelle.mulder@mail.house.gov, cope@njaficio.org
File: VVPATfinaldraftcriteriaasofAug82006-1.doc (162883 bytes) DL Time (TCP/IP): < 1 minute
Sent from the Internet (Details)

Dear colleagues interested in election matters,

I am writing to invite you to a discussion of the draft version of the New Jersey Criteria for Voter-Verified Paper Audit Trail (VVPAT) developed by the Attorney General's team working on implementing the law calling for the implementation of VVPAT on Wednesday, August 16, 2006, at 10 am to noon at the Eagleton Institute of Politics (coffee, etc) will be available at 9:45 am.

I know this is short notice, but hope you might be able to come and give the team some guidance as they make every effort to implement this initiative in a timely fashion. We will be joined by Donna Kelly, Maria DelValle-Koch, Bryan Rusciano and Karen DuMars from the AG's office.

The current draft is attached for your information -- but you can also find it on www.njelections.org.

Could I ask you let me know if you are able to attend and/or if you have invited someone else to join in. Please don't hesitate to write if you need additional information.

Thank you for considering this.

Ingrid Reed

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