



State of New Jersey
DEPARTMENT OF THE PUBLIC ADVOCATE
240 WEST STATE ST.
P.O. BOX 851
TRENTON, NJ 08625-0851
PHONE: (609) 826-5090 FAX: (609) 984-4747

JON S. CORZINE
Governor

RONALD K. CHEN
Public Advocate

June 5, 2008

**VIA FACSIMILE AND
ELECTRONIC MAIL**

Robert Giles
Director, Division of Elections
P.O. Box 304
Trenton, NJ 08625

Re: Voting Machine Examination Committee Hearings

Dear Mr. Giles:

The New Jersey Department of the Public Advocate ("Department") writes to comment on the application of Sequoia Voting Systems ("Sequoia") for approval of its Sequoia Advantage D-10, firmware version 10.5.2, along with the APS Verivote Printer, P/N AXSQ81007 (the "Advantage VVPRS System").

This letter will outline the legal issues involved, along with our assessment of the facts adduced through the most recent hearings of the Voting Machine Examination Committee (VMEC). We ultimately conclude that, at this time, there is insufficient evidence one way or the other to determine whether the Advantage VVPRS System meets the relevant legal criteria. We therefore recommend that the VMEC or the Secretary of State obtain the necessary evidence, and we will discuss how to assess this evidence under the relevant standards.

I. LEGAL ISSUES

The issues before the VMEC and ultimately, the Secretary of State are the following:

1. Did the most recent VMEC hearing comport with the requirements of procedural due process?
2. Has Sequoia carried its burden of proof and established:
 - (a) that the Advantage VVPRS System complies with N.J.S.A. 19:48-1 and -2, including but not limited to the requirements that the voting system has been “thoroughly tested,” is “reliable,” will guarantee “secrecy” to the voters, and will “correctly register or record and accurately count all votes cast”; and
 - (b) that the Advantage VVPRS System complies with the State of New Jersey Criteria for Voter-Verified Paper Record for Direct Recording Electronic Voting Machines (“Criteria”)?¹
3. In reviewing the Advantage VVPRS System, is the VMEC obligated to review the entire system for compliance with the statutes and the Criteria, or only the Verivote printer and the new hardware, firmware, and software associated with it, and has the VMEC examined the appropriate components?

II. DOCUMENTARY EVIDENCE FOR THE RECORD

The VMEC has indicated that the hearings held on May 22, 2008, were a “continuation” of the hearings held last July. (Transcript of May 22, 2008, VMEC Hearing (“May 22 Transcript”) at 9.) Consequently, the Department continues to rely on all documentary evidence we submitted at or in conjunction with those hearings. For the sake of clarity, this evidence includes the following:

- Exhibits 1-37, 40-49, and 51-67, introduced at the July 24-26, 2007, VMEC hearings;
- Our correspondence and enclosures about voting systems transmitted to the VMEC through AAG Donna Kelly on August 1, 2007; August 2, 2007; August 10, 2007; and August 28, 2007;

¹ We acknowledge, but disagree with, Sequoia’s contention that it does not bear the burden of proof on either the statutory mandates or the Criteria. See Transcript of July 25, 2007, VMEC Hearing at 216. An unapproved voting machine cannot be used at an election; a machine cannot be approved without proof of the required facts; and only the owner of a voting machine can apply for approval. N.J.S.A. 19:48-1 and -2. Thus, if the statutory proofs offered by the applicant fail, the machine cannot be used. Under these circumstances, the burden of proof falls on Sequoia. Cf. N.J.R.E. 101(b)(2).

- Public Advocate Chen's correspondence to Attorney General Milgram dated August 29, 2007.

In addition, we rely upon, and introduce as evidence in these hearings, our *amicus* brief, along with attachments, appendices and supporting papers, submitted in *Gusciora v. Corzine*, on September 13, 2007.

III. PROCEDURAL DUE PROCESS ISSUES [Legal issue 1].

The May 22 VMEC hearing was conducted on less than 24 hours' notice to the public and affected parties. Furthermore, the public's comment period was limited to eight business days from the date of the hearing. The uncontradicted testimony indicates that the shortness of this period prejudiced interested parties (*see* May 22 Transcript at 84-85), and was too short to provide as meaningful opportunity to be heard, and thus to satisfy the constitutional requirements of fundamental fairness and procedural due process.

Moreover, as we will outline later, the redaction of the Wyle Report, together with the extremely short time within which to obtain expert evaluation of the evidence and prepare the necessary legal and factual analysis, make it impossible for the Department to draw a conclusion one way or the other about whether the voting systems under review should be certified. Considering the weighty issue addressed in this hearing – whether the public can be justifiably confident that a voting system proposed for use in 18 New Jersey counties will function properly – the accelerated time frames chosen by the VMEC are inconsistent with the requirements of procedural due process.

We believe, however, that this problem could be fully mitigated by holding a second VMEC hearing. The hearing should provide at least fourteen days' notice of the date and time, and disclose all evidence that Sequoia or the State intends to rely on at the hearing, making due protection for any evidence that is actually proven to constitute a trade secret or other confidential information. *Cf.* N.J.A.C. 1:21-8.2 and -10.1; *I/M/O Motion of Public Service Electric & Gas*, 92 N.J.A.R. 2d (BRC) 73, 1992 N.J. AGEN LEXIS 4812, at *21-23 (establishing that the burden of sealing or limiting access to confidential information rests with the party attempting to maintain confidentiality). Fourteen days' notice is an appropriate time frame in light of the admonition of *Limongelli v. N.J. Board of Dentistry*, 137 N.J. 317, 324 (1993) that “due process requires agencies at a minimum to provide parties with adequate notice, a chance to examine opposing evidence, and the opportunity to present evidence and argument in response.” In another context, when the BPU and the Ratepayer Advocate were assessing whether certain local telephone services should be declared a competitive market, the administrative proceeding included far more discovery, hearings, and lead time than what was accorded here. *See I/M/O Board Investigation Regarding the Reclassification of Incumbent Local Exchange Carrier Services*, 2007 PUC Lexis 133 (B.P.U. 2007) (providing for over 60 days of discovery, three public hearings, an opportunity to comment, and evidentiary hearings, for the purpose of “develop[ing] a full and complete record in this investigation, in a manner that affords appropriate due process”). Such a timeframe is consistent with administrative procedures

generally. See N.J.A.C. 1:1-10.4(e) (parties are generally entitled to at least ten days' notice of the evidence and witnesses to be offered at a hearing).

IV. IS THERE EVIDENCE IN THE RECORD OF COMPLIANCE WITH THE STATUTORY STANDARDS AND THE CRITERIA? [Legal issues 2(a) and (b)]

When the State of New Jersey uses a mechanical device that implicates an important constitutional right, it must undertake extensive testing to ensure that the device is accurate and reliable. *State v. Chun*, 194 N.J. 54, 111 (2008). In *Chun*, several individuals claimed the Alcotest breath test device used by law enforcement officials violated the Equal Protection Clause of the New Jersey State Constitution. *Id.* at 100; N.J. Const. art. I, ¶ 1. The *Chun* court did not rely solely on the manufacturer's review of the source code to determine the constitutionality of the breathalyzer device. Rather, all parties were allowed "to engage in the technical analysis of the source code that they had asserted was so necessary to the adequate protection of their rights." *Chun*, 194 N.J. at 87. The Court emphasized the importance of an "exhaustive record relating to the source code" and relied on several expert opinions in determining that the use of the device did not violate the Constitution. *Id.* at 113-115, 131.

The Sequoia VVPRS Advantage system implicates one of the most important constitutional rights bestowed to the citizens of the United States and New Jersey. Based on the principles outlined in *State v. Chun*, we recommend that you accept testing methods only if they include an exhaustive review of the Advantage VVPRS System's source code. Moreover, we recommend that you elicit the testimony of several experts, rather than just those of the manufacturer. In keeping with *Chun*, experts retained by interested parties should be permitted to conduct a complete and thorough analysis of the voting machine's reliability and accuracy through examination of its source code.

We now examine whether the evidence adduced about the Advantage VVPRS System meets the legal requirements understood in light of the *Chun* decision.

A. The Wyle Report

Among the evidence introduced before the VMEC was a redacted version of a Test Report by Wyle Laboratories ("Wyle") dated May 6, 2008 ("Wyle Report"). The Wyle Report appears to state that the Advantage VVPRS System "meets or exceeds the requirements set forth in the [Federal Elections Commission] 2002 Voting System Standards." *Id.* at 1.

1. The choice of 2002 federal standards instead of another benchmark

As you are aware, States are free to adopt some or all of any federal guidelines for their use as they evaluate voting systems, so long as those requirements meet or exceed what State law calls for. In that vein, we question the wisdom of relying upon a six-year-old standard to make a final judgment on the adequacy of the Sequoia VVPRS Advantage system proposed for use in New Jersey after January 1, 2009.

Just last year, computer scientists testing the voting systems in California found the 2002 federal Voting System Standards to be “inadequate.” *See, e.g., California Secretary of State, Withdrawal of Approval of Hart Intercivic System 6.2.1 DRE & Optical Scan Voting System and Conditional Re-approval of Use of Hart Intercivic System 6.2.1 DRE & Optical Scan Voting System*, at 1 (August 3, 2007) (available at http://www.sos.ca.gov/elections/voting_systems/tbr/hart.pdf). In place of these “inadequate” standards, there are at least two other sets of federal guidelines that the State could rely upon, dating from 2005 and 2007. *See* <http://www.eac.gov/voting%20systems/voluntary-voting-system-guidelines-fact-sheet>. The United States Election Assistance Commission (EAC) has favorably characterized its 2007 draft guidelines as a “complete re-write of the 2005 guidelines, intended to address the next generation of voting systems. The guidelines contain new and expanded material in the areas of reliability and quality, usability and accessibility, security, and testing.” *Id.*

We acknowledge that under the EAC’s interpretations, there may be a plausible argument that the 2002 standards set the appropriate benchmark for the Advantage VVPRS System. As noted above, however, States have the authority to choose parts of, or otherwise vary from, the voluntary federal standards. Accordingly, rather than relying on outdated federal standards, we recommend subjecting the Advantage VVPRS System to a more modern and scientifically appropriate method of testing, either as part of this review process or as part of any subsequent or periodic review of voting technology.

Notwithstanding the foregoing, there is some information in the Wyle Report that we regard favorably.

2. Wyle’s volume testing

Our prior submissions to the VMEC have noted that a crucial factor in determining whether a voting system meets the statutory requirements of “reliab[ility]” and an “accurate[] count [of] all votes” is a thorough volume test of the proposed system. We note Wyle’s claim that it performed a volume test of 7,600 ballots, which is more than four times the amount of testing performed by NJIT, and which comes close to our previously recommended test sample of 10,000 ballots. This is clearly a positive development.

However, Wyle’s report does not expressly confirm that in those 7,600 ballots, there were no jams of the kind that have previously plagued this printer, nor does it confirm that the number of votes as determined from a comparison of the readable paper printouts, the barcodes on the printouts, and the machine-recorded totals, all match. We placed calls to appropriate Wyle personnel to confirm this information, but they have not returned our calls as we write this letter. Provided that the VMEC and Secretary of State are able to confirm this information, we would consider this finding to be probative evidence that the Advantage VVPRS System meets the statutory standard of reliability.

3. The general rigor of the Wyle Report

Our office's previous submissions have explained in great detail why, historically, the certification of a federally certified independent testing authority (ITA) such as Wyle, standing alone, does not provide adequate assurance of the reliability or accuracy of a voting machine. New evidence, however, suggests that improvements in ITA testing, described as a more "vigorous and strict testing process" (May 22 Transcript at 24; *see also* Wyle Report at 1, 5), may make the results more probative than before.

In our previous testimony, the Public Advocate's experts (J. Alex Halderman and Harlan Yu), explained a variety of security vulnerabilities found in Direct-Record Electronic ("DRE") voting machines generally. They determined that "[t]he only way to reasonably address these risks is to conduct a comprehensive source code security review, accompanied by 'red team' testing that simulates the role of a malicious attacker." They further found that without a security audit of the machines' programming, "it is impossible to say whether these machines can reliably deliver an accurate count."

In their review of the relevant literature as of their August 2007 testimony, Messrs. Halderman and Yu found that no such testing has been performed with respect to the Sequoia Advantage or the Avante Vote-Trakker. Moreover, they found that NJIT's testing protocols did not include such testing.

The present record shows that Wyle reviewed the source code to determine "logical correctness, system integrity, reliability, and accuracy." (Wyle Report at 21; *see also id.* at 11 (describing a review of "system security specifications").) However, the redacted Wyle Report does not describe whether it performed "red team" tests or a "security review" or "security audit" and Wyle did not respond to our requests for further information. Unfortunately, given Sequoia's decision to present only a redacted version of Wyle's findings, we are unable to conclude whether Wyle conducted all of the kinds of tests the Public Advocate's experts deemed appropriate. Nor are we able to conclude whether Wyle's testing included the kind of exhaustive review the *Chun* Court demanded.

It therefore devolves upon the VMEC and the Secretary to obtain the answers to these questions and to confirm these answers by allowing experts other than the manufacturers to examine the version of the Advantage VVPRS System being offered for certification. If the necessary testing has in fact been performed, however, then the VMEC and the State might be justified in relying on the Wyle Report as evidence of compliance with the State's statutory requirements for voting machines.

B. The NJIT Report

Based on our review of the hearing transcript, it is not clear what weight, if any, the VMEC and the Secretary of State intend to place on the report from the New Jersey Institute of Technology (NJIT) dated December 22, 2007, regarding this printer. We note that NJIT and

Wyle tested different versions of the firmware: NJIT tested version 10.4.18, whereas Wyle tested version 10.5.2. There is no evidence in the record from anyone associated with NJIT about differences in the voting system or NJIT's views of the effect of these changes.²

It also bears repeating that while the State has placed great reliance on the testing performed by NJIT, the NJIT testers have nevertheless admitted that they were unable to conclude whether their tests, which purported to examine compliance with the Criteria, "represent[ed] to a reasonable degree of scientific certainty a valid means for testing the voting machines." (Transcript of July 25, 2007, VMEC Hearing at 169.) Moreover, there is no evidence that NJIT performed a source code review as part of its tests. *See* NJIT's December 22, 2007, report at 3-4, which does not mention source code or software testing of any kind.

The discrepancy between what NJIT tested and what was offered at the May 22 hearing, along with NJIT's prior disclaimers about the scope of its testing, make it impossible for a fact finder to say at this point what probative value, if any, the NJIT report continues to have. Absent such testimony from NJIT about the continuing vitality of its report and/or its applicability to this revised system, we caution against reliance upon its findings.

C. Compliance with the Criteria.

As described earlier, Sequoia must, in addition to proving compliance with the statutory standards, also prove compliance with the State's May 2007 Criteria.³

In the limited time available to us, we have focused only on one aspect of the Criteria, namely, the requirement of § VI(F) that vendors must deliver or escrow source code and allow for testing at the State's discretion. Our review of the May 22 transcript and the relevant documents leaves substantial doubts about the exact status of the escrowing of the Sequoia source code and hence, whether there has been compliance with that section. The testimony about escrowing is in conflict. On the one hand, Sequoia claims that the Advantage's source code is in escrow with a private company for the benefit of the State and the several counties. (May 22 Transcript at 63, 70.) On the other hand, Sequoia also claims that the source code "is under Protective Order." (*Id.* at 51.) Presumably, Sequoia is referring here to an order of the Superior Court dated May 20, 2008, in *Gusciora v. Corzine* (the "Protective Order").

² We recommend that a report be issued to all relevant parties and the public when firmware changes are made by Sequoia. This recommendation is consistent with due process and the reporting method outlined in *State v. Chun*, 194 N.J. 54 (2008). The *Chun* court ordered "that the State shall provide notice, both to the parties and by means calculated to be generally accessible to the public and shall specifically provide notice to the New Jersey State Bar Association, of any and all proposed future revisions to the Alcotest New Jersey Firmware, which notice shall not be generic, but shall be sufficiently specific to identify the proposed software changes so as to afford notice in compliance with due process." *Id.* at 154.

³ In our April 16, 2007, letter to AAG Donna Kelly, and again in proceedings before the *Gusciora v. Corzine* court, this Department raised several objections to the State's use of these criteria. Even though we discuss the Criteria here, we reserve those objections.

Sequoia's contradictory statements cannot both be true. The Protective Order gives the counties no access rights whatsoever and limits the State's inspection of the source code to three attorneys and one expert for the State, and then only at a specified State Police office. (Protective Order at ¶¶ 5, 11.) Furthermore, the Protective Order limits the use of the source code to the "preparation of reports . . . and for the giving of testimony" in the *Gusciora v. Corzine* litigation and bars its use for other purposes such as the testing contemplated by the Criteria. (See Protective Order at ¶¶ 5, 7.)

If the Protective Order – as Sequoia contends – applies to the escrowed source code, then the fact that the material has been escrowed provides virtually no protection to the end users, as neither the State or the counties can meaningfully access it, and therefore, Sequoia has not complied with Section VI(F) of the Criteria. Until the Protective Order is either confirmed to be inapplicable to the escrowed source code, or modified to allow for the State and the counties to use and test the escrowed source code at their discretion, we are unable to conclude that a compliant escrowing arrangement is in place.

V. REVIEW OF THE ENTIRE SYSTEM v. SIMPLY THE NEW PRINTER [Legal issue 3]

There continues to be substantial debate about (a) whether the VMEC is obligated to re-examine the entire voting system or simply the VVPRS add-on; and (b) whether the evidence adduced shows that the VMEC has in fact re-examined the entire system.

N.J.S.A. 19:48-2 provides that a machine that has been improved or changed must undergo a complete re-examination and re-approval if the improvement or change "impair[s] its accuracy, efficiency, or capacity."

As we have previously stated, the undisputed evidence shows that the printer add-on to the Sequoia Advantage will undoubtedly extend the time each voter needs to cast his or her ballot. As "efficiency" is defined as the "time taken to vote," and an adverse impact on "efficiency" means something that "slow[s] down the process," the addition of the printers is an "impairment to efficiency" that requires re-evaluation of the voting system as a whole. See generally United States Election Assistance Comm'n., 2005 Voluntary Voting System Guidelines, Vol. I at 47 (available at http://www.eac.gov/voting%20systems/docs/vvsgvolumei.pdf/attachment_download/file) (defining "efficiency" as the "time taken to vote" and an adverse impact on "efficiency" as something that "slow[s] down the process"). In its August 2007 decision denying certification to the Advantage with VVPRS add-on, the VMEC misstated the statutory standard, suggesting that the printers did not "impair[]" the "operation" of the voting system. However, that is not the legal standard, and the evidence of "impair[ment]" of the "efficiency" of the voting system remains unrebutted. Sequoia's recent testimony that the printer is an "addition to an existing certified machine" (May 22 Transcript at 92) might be true, but that assertion does not change the fact that the addition of a printer extends voting time, making it an impairment to efficiency that requires a complete re-examination. If the VMEC or the Secretary

of State were to suggest that a complete re-examination was not necessary, that would constitute reversible legal error.

That leads to the next point, which is whether there is sufficient evidence in the record of a complete re-examination of the system. We do not credit Sequoia's claim that the NJIT report constituted a plenary examination of all "the software . . . [and] the entire system, not just the printing part of it." (May 22 Transcript at 94.) In fact, NJIT's December 22, 2007, report (pp. 1, 6, 115) says otherwise. Sequoia's contrary claims lack a factual basis.

Notwithstanding the foregoing, the Wyle report and the VMEC's consideration of that report may be read as constituting a review of the entire system, and not just the printer. (See Wyle Report at pp. 1, 4, 5.) If Wyle is able to confirm these facts, then the VMEC could credibly contend that it performed a review of the entire system, as the law requires, instead of just the printers.

Thank your for your consideration of our views. We look forward to a continuing and productive dialogue on this matter.

Very truly yours,

RONALD K. CHEN
Public Advocate

By: 

FLAVIO L. KOMUVES
Deputy Public Advocate

cc: Donna Kelly, AAG
Adolph Romei, Esq.