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September 14, 2007

Mr. Steven M. Pearson
Vice President, Certification
Election Systems & Software
11208 John Galt Boulevard
Omaha, NE 68137

Dear Mr. Pearson:

On May 9, I declined the request from Elections Systems & Software (ES&S) to administratively recertify the ES&S voting system used to conduct Ranked Choice Voting (RCV) elections in San Francisco through December 31, 2008. This system is comprised of the following components:

- Optech Eagle, APS version 1.52, HPS version 1.30
- Optech IV-C version 1.08(c)
- Unity: EDM, version 7.2.1.3; HPM, version 5.0.3.2; ERM, version 6.4.3.2b; Audit Manager, version 7.0.2.0; Optech Image Manager, version 3.2.0.0; DAM, version 5.0.3.0
- AutoMARK VAT, version 1.0
- AIMS, version 1.09

As I noted when I declined ES&S's request, the system had already received three certifications on either a "one-time" or "one final time" basis to permit it to be used in California, despite the fact that it has never even been federally qualified to the federal voting system standards.

More specifically:

- This voting system was first certified on April 30, 2004, for use only in San Francisco's November 2004 election. As a condition of that certification, ES&S was required to submit the system for limited federal review by May 10, 2004. Independent Testing Authorities (ITAs) Wyle and Ciber conducted that limited federal testing, and state certification testing was conducted simultaneously. The testing included a limited source-code review and functional testing to verify the correct application of the RCV algorithm. Based on that testing, the system was recertified on July 12, 2004, to acknowledge the completion of the testing requirement. The restriction to use the system on a one-time only basis in San Francisco's November 2004 Election remained in place.

- After a public hearing on February 17, 2005, the Secretary of State's Elections Division Chief re-certified the system on March 7, 2005, to permit the RCV system to be used only through December 31, 2005.
- On August 3, 2006, the prior Secretary of State received an application from ES&S for re-certification of the RCV system, requesting approval for "one-time, final use" of the system in the November 2006 election. In consideration of this application, the Secretary's Office of Voting System Technology Assessment (OVSTA) staff and the state consultants conducted testing of the system in Omaha in August 2006, and again in September 2006. Several anomalies were observed during that testing that were detailed in the Secretary of State's staff report from the examination of the system. Finally, because ES&S had requested only one-time approval, a volume test was not conducted on this system.
- On October 25, 2006, then-Secretary of State McPherson granted one-time approval to this RCV system for use only in the November 2006 General Election, with the clear understanding that there would be no more extensions of certification for this system.

When I declined to administratively re-certify the system in May, I informed you that ES&S was invited to resubmit its request should the base Unity/Optech Eagle/Optech IV-C system successfully complete the top-to-bottom review of California's voting systems.

Subsequently, ES&S decided not to submit the system used in San Francisco to the top-to-bottom review process. This decision by ES&S with respect to the Optech Eagle and its related components jeopardizes the ability of the City and County of San Francisco to conduct its scheduled local election in November 2007 with anything other than a 100% manual tally process.

Based on tests conducted by the Secretary of State's office in 2006, the ES&S Optech Eagle and related components have a number of problems in accurately tallying the votes that simply cannot be overlooked. According to a report issued by this office on October 11, 2006:

> "...several of the test ballots were not properly read by the Optech III-P Eagle. Although the machine was cleaned twice and re-calibrated, it kept giving the same results with the same ballots. While the ballots had been marked using the pen supplied by ES&S for that purpose, it was finally determined that these were the wrong pens for use with the wrong ink for the Optech Eagle to properly read (The pens were recommended by ES&S for the Optech IV-C M400). The incident served to underscore the essential vulnerability of the older Eagle tabulator when ballots are marked with a non-approved pen, as any voter might do in the polling place, despite instructions to the contrary."

Documented evidence retained from that testing clearly illustrates this problem with the Eagle, as well as, to a lesser degree, the Optech IV-C, which is capable of reading a slightly broader but still limited range of inks.

The October 11, 2006, report that was used as the basis for granting the one-time approval on October 25, 2006, stated:

> "The Secretary of State reserves the right, with reasonable notice to the Vendor and to the counties using any of the voting systems, to modify the Procedures used with any of the voting systems and to impose additional requirements with respect to the use of any of the systems if the Secretary of State determines that such modifications or additions are necessary to enhance the accuracy, reliabilty, or security of any of the voting systems."

It is unfortunate that rather than alter its system to address the problems noted above, ES&S has decided to engage in a chess match at the expense of the voters of San Francisco, their elected representatives, their candidates for office, as well as the proponents and opponents of local charter amendments that will be on the November 2007 ballot.

It is my responsibility to ensure that elections in California are secure, accurate, reliable, and accessible. It is also my goal to have the required accurate tallies completed in a reasonable period of time. Based on the findings of my Post-Election Audit Standards Working Group and a number of related studies that have found it is possible to ensure the accuracy of elections results without requiring a 100% manual count of the ballots, I will agree to administratively re-certify the ES&S RCV voting system for the November 2007 election under the following conditions:

- This re-certification of the RCV voting system will expire on November 30, 2007. The expiration applies only to use of the voting system components to cast and tally votes in an RCV election. Use of the components used in a non-RCV election will be governed by the existing certification requirements imposed on ES&S.
- San Francisco elections officials must include a clear written notice to mail ballot voters that details the marking implements that must be used to ensure that the ballot is accurately read. The written notice must also clearly warn the voters that if they use an alternate marking implement, the votes on the ballot may not be accurately counted.
- San Francisco elections officials must post in each voting booth a clear written notice that details the marking implements that must be used to ensure that the ballot is accurately read. The written notice must also clearly warn the voters that if they use an alternate marking implement, the votes marked on the ballot may not be correctly counted.
- San Francisco elections officials must post in each voting booth a clear written notice that advises voters to check the choices they have marked on their ballots to ensure they have not unintentionally overvoted or undervoted in any contest.
- San Francisco poll workers are required to present each voter with an authorized ballot-marking implement and to caution each voter that not using the implement could result in their ballot not being correctly counted.

- All RCV contests must be printed on a ballot sheet that does not include any non-RCV contests.
- The Eagles may not be used to tally results in the precinct that are uploaded or combined with any official or unofficial election results. The Eagles may be used in the precinct to provide voters with overvote or undervote warnings, and for securely storing ballots so they can be returned to the central office for tabulation on the Optech IV-C central tabulator.
- San Francisco elections officials must visually inspect all ballots prior to scanning and tabulation by the Optech IV-C central tabulator. Any ballots marked in anything other than a Number 2 pencil, black ink or dark blue ink must be duplicated in accordance with EC §15210 prior to tabulation.
- The IV-C must be programmed to outstack all RCV ballots that have an undervote in any rank/choice of any contest, (i.e., where the voter is allowed to indicate three choices for a single office), the IV-C must be programmed to outstack all RCV ballots on which the IV-C detects fewer than three choices for the office.
- All RCV ballots with races involving three or more candidates, including qualified write-in candidates, that are outstacked for an undervote that have valid votes marked on the ballot must be manually duplicated in accordance with EC §15210 with an authorized marking device, and then tabulated.
- For all ballots cast at the precinct that are tabulated on the Optech IV-C, San Francisco must conduct a manual tally of all ballots in 10% of the precincts in accordance with the procedures in EC §15360. As noted above, the Optech IV-C is capable of reading a limited but slightly broader range of inks than the Eagle. Races in which there is only one candidate for the office may be excluded from all manual tally requirements.
- San Francisco elections officials must conduct a manual tally of the 25% of all absentee (vote-by-mail) ballots cast.
- If there are discrepancies between the machine and manual counts, San Francisco elections officials must document and disclose those discrepancies and take the following steps to resolve the discrepancies:
  - The percentage of discrepancies found in the manual count sample for a given race must be presumed to exist in approximately the same proportion in the remaining ballots cast in the race.
  - To calculate the discrepancy percentage for each race, compare the total number of discrepancies found in the manual count sample for the race to the total ballots cast for that race in the manual count sample.
  - If the discrepancy percentage represents 10% (one-tenth) of the margin of victory for that race, then additional precincts must be manually counted for that race. This requirement is designed to guard against the possibility that the percentage of discrepancies in the remaining ballots is higher than that found in the manual count sample.

- Additional precincts must be counted in randomly sampled blocks of 5% until the total number of discrepancies presumed to exist – re-calculated using the method above – is smaller than 10% of the overall margin of victory in that race tallied electronically.

- For multi-winner elections, the margin of victory is the difference between the candidate who had just enough votes to win a seat and the next candidate below. For example, for a race with three open seats, the margin of victory would be the difference between the third and fourth place candidates.

- For RCV elections, elections officials must compare the discrepancy percentage to both the margin of victory and also the margin between the last place and second to last place candidates. If the discrepancy percentage represents 10% (one-tenth) of the margin of victory <u>or</u> the margin between the last and second to last place candidates, then additional precincts must be manually counted for that race according to the above steps. The purpose of checking the margin between the last and second to last place candidates is to ensure the last place candidate was properly called, since the ballots cast for that candidate will be taken and the second place votes on those ballots will be distributed to the remaining candidates in accordance with the RCV regulations.

- San Francisco elections officials must adopt procedures, to be approved by the Secretary of State, to reconcile any discrepancies between the electronic tally of ballots and the increased manual tally results.

- Prior to Election Day, San Francisco must keep all voting equipment and ballots under its control, in a secure location at all times, and subject to procedures that prohibit access to the equipment or ballots without proper authorization. On Election Day, when the voting equipment and ballots are under the control of poll workers, San Francisco must have adopted chain of custody procedures to ensure that only authorized personnel have access to the equipment and materials. San Francisco must adopt a security plan, to be approved by the Secretary of State, for its equipment, ballot handling, and other related issues.

- The vendor, ES&S, and San Francisco shall record and document all problems and malfunctions with the Eagles and Optech IV-C, whether and how the issues were resolved, why any issues were not resolved, and provide a report to the Secretary of State that is signed by both ES&S and the San Francisco City Clerk or Director of Elections by November 30, 2007.

- The vendor, ES&S, is required to reimburse San Francisco for any and all additional costs associated with complying with these conditions, including the cost to print warning notices to the voters, the cost to produce extra ballots necessary for duplication and any costs associated with complying with the requirements imposed by this administrative re-certification.

The requirements outlined above are intended to do what ES&S has to date declined to do – ensure that the ballots of San Francisco's voters are accurately tallied. The requirements rely on increasing the levels of review if it is apparent that ballots are not

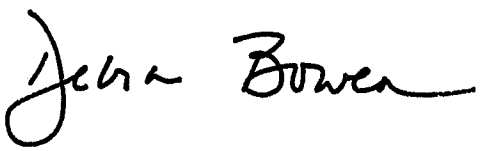
being read accurately and that the election results will not be correctly reported. These increased manual auditing requirements will increase the likelihood that any inaccuracy will be detected and rectified.

With this enhanced check on the accuracy of the vote count, this short-term administrative re-certification of the voting system will permit San Francisco to conduct its upcoming municipal election without undue disruption while it completes the process of replacing this obsolete equipment.

I would be remiss if I didn't point out once again how troubled I continue to be by ES&S's approach to both the voters of this state and the voting system certification process in California. The company's refusal to take seriously the problems involving the accuracy of its voting system used by San Francisco and the city's voters is just the latest example. Earlier this year, ES&S refused to submit one of its voting systems, the InkaVote Plus system used by Los Angeles County, in a timely manner to the top-to-bottom review of California's voting systems. Today, ES&S finally delivered the last piece of equipment required to begin the review that should have been complete two months ago. ES&S also has yet to provide completed certification applications that will allow me to begin certification review of its upgraded Unity/AutoMARK and Ranked Choice Voting systems, even though the company is depending on securing certification in light of its choice not to submit the currently certified Unity/AutoMARK system to the top-to-bottom review. Further, it appears the company sold nearly 1,000 voting machines to five California counties last year without notifying this agency, as required by law, that it had made changes in the hardware. Finally, ES&S has given San Francisco no alternative but to continue using a voting system that may not accurately tally votes because the system consistently fails to read ballots that are marked with popular ink types.

If you have any questions or concerns, please contact my staff at (916) 653-7244.

Sincerely,



Debra Bowen
Secretary of State

DB:elg:bm:lf

cc: The Honorable Gavin Newsom
Board of Supervisors, City and County of San Francisco
John Arntz, Director of Elections