

**From:** "Richard Tamm"

**Date:** July 2, 2007 10:10:37 PM PDT

**Subject: Additional Public Comments**

I spoke today for three minutes during the Public Comment period at your Post-Election Audit Standards Working Group public meeting. I was the man who had been a computer programmer for over 30 years. I would like to re-iterate the points I had made at today's meeting plus add some additional suggestions. Thank you and all the members of this working group for devoting the time and energy to work on guaranteeing that our elections are, as much as possible, free from corruption, fraud, and simple programming errors, etc., while also being sensitive to the burdens of our ROVs (Registrars of Voters).

1. In large software projects, the testing of the software is done by a team of testors who are separate from the programmers who developed the software. This is because the programmers are reticent to find errors in their own work while the testors are rewarded for finding as many errors as possible. In like manner:

A. The auditing should be done by a different, independent group of people from the ROV, possibly from a county's audit department (IA - Independent Auditor).

B. When discrepancies are found, they should be investigated, resolved, and made public by the ROV in cooperation with the IA.

C. If the discrepancies are such that they require a wider recount by the ROV, this additional work should be compensated for in full by the state, plus some additional amount for "pain and suffering".

D. If the auditing reveals any significant discovery such as fraud, programming errors, etc., some additional recognition should be paid to the ROV and IA.

2. As in programming, where extremes of situations are tested, any election which is "certified" cannot have impossible numbers (for ex., there were reports of precincts/counties in Ohio in 2004 where "certified" elections had more votes than registered voters in that precinct/county). All such impossible numbers and procedures for dealing with them must be codified.

3. The randomly selected precincts to be hand-recounted after the election cannot be picked till after the totals for all precincts have been made public.

4. Very clear procedures on what to do if there are discrepancies between the machine and hand-recounted totals must be devised, published, made public, and strictly enforced.

5. The hand-recounted totals from the VVPAT's of DRE's must match the machine totals exactly. And, although outside the purview of this working group, the accuracy of the VVPAT's can be further insured by emphasizing the importance of the VVPAT's in the ROV's training of poll workers, including training the poll workers to remind the people who choose to vote on the DRE's to verify the correctness of their vote on the VVPAT's.

6. Since our votes are more important then money, the audit or manual tally needs to be, at every step and as much as possible, as strict as bank audits.

7. Every step of the audit process must be observable by the public, including

easy viewing of the main tabulator throughout the election, and detailed explanations of any work done on the main tabulator machine during the election.

8. All totals by precinct, of mail-in ballots, provisional ballots, etc., should be available to the citizenry via data files on the internet. This would facilitate independent verification by citizens and news media as well as sociological and political studies of the data by researchers.

9. All groups involved in manual tallies must be four people, not three. There must be a person verifying the accuracy of the numbers being read.

10. To insure that all VVPAT's will be available for manual tallies,

A. all DRE's to be used in an election must be pre-tested with their VVPAT's to insure that they work properly, and

B. there must be detailed procedures in place on how to handle any DRE whose VVPAT stops working properly during an election. This should include: stopping further use of that DRE, reporting it immediately to the ROV, and getting a replacement DRE from the ROV ASAP.

11. It is generally accepted that "tiered audits" (the closer the race, the larger percentage is hand-counted) are more accurate than low fixed percentage ones. If the manual tally is to be anything close to an audit, a tiered audit is the ideal and must be provided for.

12. For long-range planning, consider reducing manual tally costs while also involving the general citizenry more in our election process by instituting "election duty" similar to "jury duty".

Thanks again for your time and consideration.

Richard Tamm  
1015 Shattuck Avenue  
Berkeley, CA 94707  
(510) 524-4608  
[richard.tamm@gmail.com](mailto:richard.tamm@gmail.com)