

May 21, 2007

To: Technical Guidelines Development Committee

In Section 2.2 History of Federal Voting System Standards and Guidelines, in the May 21-22, 2007 Draft Recommendations, it is stated, in the first two sentences, that "In 1975, the National Bureau of Standards (now the National Institute of Standards and Technology) and the Office of Federal Elections (the Office of Election Administration's predecessor at the General Accounting Office) produced a joint report, Effective Use of Computing Technology in Vote Tallying. This report concluded that a basic cause of computer-related election problems was the lack of appropriate technical skills at the state and local level to develop or implement sophisticated Standards against which voting system hardware and software could be tested."

These sentences are not exactly correct, and I would like to provide a more correct history. My work was significant in this history, and the record needs to be set straight. I joined the National Bureau of Standards in 1969, in its relatively new unit, the Center for Computer Sciences and Technology. (This organization would become, first, the Institute for Computer Sciences and Technology and, eventually, the Information Technology Laboratory.) The center was established as a result of passage of a federal law in 1965 called The Brooks Act after Rep. Jack Brooks (D-TX). The Brooks Act was concerned with the management of the federal government's data processing equipment. There were only mainframes at the time; personal computers were unknown. The number of computers in the federal inventory were counted and reported. Now, with personal computers everywhere, such a number would be meaningless, not much more important than counting the number of typewriters. In fact, now there are likely to be more computers than typewriters.

The Office of Management and Budget was to become, under the Brooks Act, the policy-maker for information systems. The General Services Administration was to have the function of procurer of data processing equipment. The National Bureau of Standards (NBS) was required to set standards so that computers of different manufacturers in the federal inventory could communicate with each other, and so that programmers could use their skills with more than one type of computer. NBS was also given the right to undertake consulting in data processing for other federal agencies.

In 1973, I was asked to find additional other-agency projects for NBS in the computer sciences area. In that year, I met Gary Greenhalgh, who was manager of the Clearinghouse on Election Administration, a unit in the Office of Federal Elections (OFE) of the General Accounting Office. Gary said that the OFE had received a letter, said to be from Sen. John Tunney (D-CA), asking for a study of computerized voting, since there had been considerable difficulty in the use of punch card voting systems in southern California. With the agreement of Assistant Comptroller-General Phillip "Sam" Hughes, and the assent of Comptroller-General Elmer Staats, the Clearinghouse gave NBS \$100,000 in early 1974 to carry out an other-agency project for them. The result of the project was the report called Effective Use of Computing Technology in Vote-Tallying.

This report was an NBSIR (National Bureau of Standards Interagency Report) issued in 1975 and numbered 75-687. The report has my name (and no other) on the cover as author. In 1978, NBS reprinted the report as SP 500-30, with no changes. Thus, this report, similarly, has my name as author, and it may be obtained under that number. It was reprinted in that series at my request, since the NBSIR series would not be stored in federal depository libraries, but the SP 500 series would be. If that had not happened, the demand for the publication that occurred after the debacle in Florida in 2000 could not have been satisfied. In general, NBSIR documents are not retained.

I spent a year writing this report and charged my time against the \$100,000 from GAO. The report was issued by NBS in 1975. It was not a collaboration with the Office of Election Administration; the list of Acknowledgements on pages iii and iv does not show any personnel from that office. However, Staats and Hughes made clear that their policy direction was that current data processing equipment used in vote-tallying was not to be described as defective, so as not to reduce public confidence. The situation with regard to the arrangement between NBS and OFE is stated in the third and fourth paragraphs, starting on page 1, of the report:

"In recognition of concerns expressed in Congress and by election officials and the public, the Clearinghouse, through the General Accounting Office, requested that the Institute [of Computer Sciences and Technology] study the use of computers in vote-tallying. Such concerns are that increasing computerization of election-related functions may result in the loss of effective control over these functions by responsible authorities and that this loss of control may increase the possibility of vote fraud.

"The Institute was specifically asked to "conduct a systems analysis and evaluation of the role of automatic digital processing equipment in the vote-tallying process." Included in the analysis was to be an identification of the hardware, software, and administrative problems that had been encountered; an evaluation, where possible, of the causes of the problems; and an analysis of methods currently being employed to detect and prevent computer vote-fraud. Areas of investigation were to include election system design, training of election officials, ballot accountability, certification and inspection of computer programs, independent audits of election processes, counting center security provisions, and ballot recounts. The Institute also was specifically asked to "develop operational guidelines that election administrators could implement to help insure the accuracy and security of the vote-tallying process." In addition, the Institute was requested to assess the impact of new technological developments involving computers on the vote-counting process and to provide information on how those developments might be employed and made secure."

The conclusions of the report cover many of these areas, and they concern many of the issues that remain current and under discussion. The Summary Findings and Conclusions cover seven pages, from page 3 through page 9. I suggest that members of the TGDC may wish to read these pages in order to appreciate all of the different technical subjects covered by the report and how proposed concerns in 1975 mesh with current concerns.

In view of this history, I suggest that the first two sentences in Section 2.2 be re-written as follows:

"In 1974, the National Bureau of Standards (now the National Institute of Standards and Technology) began a research project under computer scientist Roy G. Saltman, funded by the Office of Federal Elections of the General Accounting Office. This project resulted in a 1975 NBS Interagency Report, later reprinted as SP 500-30, Effective Use of Computing Technology in Vote-Tallying. The report provided findings and conclusions about improving the accuracy and security of the vote-tallying process, about improving the management of the election preparation process, and about institutional factors affecting accuracy and security. The report also pointed out the lack of systematic research on election equipment and systems, and on human engineering of voting equipment, and it concluded that the setting of national minimum standards for federal election procedures would serve a valuable function."

I request that the TGDC give serious consideration to my proposals for changes in wording.

Sincerely,  
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