SECRETARY of STATE

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# EXAMINATION AND EVALUATION OF VOTING EQUIPMENT

## REPORT OF THE SECRETARY OF STATE

### EXAMINATION OF VOTING SYSTEM BY THE SECRETARY OF STATE

A public hearing was held in the Office of the Secretary of State on Thursday, February 14, 1985 to examine an optical scan voting system pursuant to the provisions of RCW 29.33.041 and 29.34.090. The system consists of a paper ballot and an optical scan ballot tabulating device and the related software associated with that device. A metal sleeve designed to guarantee ballot secrecy was also demonstrated. The vendor of the voting system was American Information Systems, Inc., of Omaha, Nebraska, and they were represented by Todd Urosevich and David M. Hughes. Present at the meeting were Art Sealey from Pierce County, Ray Levee of Cowlitz County, and Pat Knapp, the Jefferson County Auditor.

The meeting was called to order by Laura Eckert, the Assistant Secretary of State, and she introduced Don Whiting, the Elections Supervisor, and John Pearson, the Coordinator of Elections Administration, of the Secretary of State's Elections Division.

Mr. Pearson began by remarking that the existing statutes did not specifically cover the paper ballot used by the AIS System, but that for purposes of the hearing it was to be considered a voting device as it was electronically tabulated. He then specified the conditions a voting device must meet in order to be approved for use in Washington, as set forth in RCW 29.34.080:

1.) It must secure to the voter secrecy in the act of voting;
2.) It must provide facilities for voting for a candidate in as many political parties as may be on the ballot;

3.) It must provide facilities for voting for or against as many measures as may be on the ballot;
4.) It must permit the voter to vote for any person and upon any measure he or she has a right to vote upon;
5.) It must permit the voter to vote for all candidates of one party or in part for candidates of one party and in part for candidates of other parties;
6.) It must correctly register all votes cast for candidates and on ballot propositions;
7.) It must list all candidates for any office in any election or primary.

Mr. Pearson then reviewed the requirements for approval of any vote tallying system for use in the state. State law (RCW 29.34.090) provides that such systems must:

1.) Be capable of correctly counting votes marked on the ballot for any office or ballot proposition;
2.) Be capable of recognizing and not counting over-voted ballots;
3.) Be capable of accumulating a count of a specific number of ballots tallied for a precinct;
4.) Be able to accomodate the rotation of candidates' names;
5.) Be capable of automatically producing precinct totals in either a printed, marked, or punched form;
6.) Be capable of adding precinct totals and producing a cumulative total.

Ms. Eckert then stated that the purpose of the meeting was to examine the voting system and that approval or disapproval would depend upon subsequent review of that examination. She added that upon completion of that review process the secretary of state's office would formally notify the boards of county commissioners and the county auditors of the results of that review, and then invited Mr. Urosevich to give his presentation.

Mr. Urosevich gave a detailed review of how the voting system operates, concentrating on the mechanics of the process and giving a step-by-step account of an election conducted with the AIS System. He also explained that the AIS 315 ballot tabulating device was an optical scanner that used fiber optics rather than mark sense. He then explained the

various buttons on the device and the function that each performed and then discussed the various types of reports the device was capable of generating on election night.

Following a short break, several tests were performed on the device, using a pre-audited group of ballots prepared by Mr. Pearson. In effect, a sample partisan primary election was run, using a ballot layout based on the 1984 State Primary and featuring eight separate rotations and then a sample odd year general election was run, featuring split precincts and no rotation. Finally, a group of test ballots was run where the ballots had been intentionally mismarked or marked contrary to the instructions given for correctly marking the ballot. The results of the tests performed using the pre-audited group of ballots matched those arrived at when the ballots were manually tabulated and are on file in the secretary of state's office. Any persons wishing to examine the test ballots and/or the printed results of the tests may do so at the office of the secretary of state.

Following the conclusion of the tests, Mr. Whiting asked a series of specific questions regarding the capability of the system to handle a variety of election situations which might arise in a Washington election. He also had questions regarding the software and the security of the voting system. Mr. Pearson then had a question regarding Logic and Accuracy Tests performed by the secretary of state and whether or not there was any sort of generic ballot stock that could be used. The conclusion was that in order for the secretary of state to conduct a logic and accuracy test for each precinct in a county it would require at least one ballot from each precinct, supplied by the county.

Ms. Eckert asked if there were any questions for the record from any member of the audience. Hearing none, the meeting was adjourned.

The vendor was unable to furnish the secretary of state with any quantitative test information regarding the sensitivity of the equipment to variations in environmental conditions, such as temperature and vibration, or to variations in operating conditions, such as fluctuations in line voltage or current surge. The secretary of state chose not to conduct such tests independently in lieu of the qualification to the approval of this equipment contained in the conclusion of this report.

## FINDINGS BY THE OFFICE OF THE SECRETARY OF STATE

After review of the results of the various tests performed during the evaluation of the AIS System, and of the presentation by the vendor of the equipment, the secretary of state finds that, where applicable, the ballot, when used by the system in conjunction with the metal sleeve or other device guaranteeing ballot secrecy, satisfies the requirements of RCW 29.34.080 and the vote tallying system satisfies the requirements of RCW 29.34.090.

Therefore, in accordance with the provisions of RCW 29.33.041, the AIS Model 315 vote tabulating device, the paper ballot used with that device, and the metal sleeve are approved for use in Washington, subject to the following conditions:

1.) The equipment must be used with either the metal sleeve or a security envelope in order to guarantee the secrecy of the ballot;

2.) The equipment must be operated in a manner that will stop the processing of ballots whenever an overvoted ballot, undervoted ballot, or ballot containing a write-in is encountered, or the ballots must be thoroughly inspected and these situations dealt with prior to the ballots being processed. The vote-tallying device cannot determine voter intent and this must remain a manual process; and

3.) The equipment must be used with a device capable of suppressing current surges, voltage fluctuations, and other power line disturbances which meets or exceeds the following specifications: a) maximum spike voltage of seven thousand volts, b) clamping voltage of fifty-five volts, c) maximum spike current of two thousand amperes for an 8x20 microsecond spike pulse, d) clamping response time of 10 nanoseconds, and e) noise rejection over a frequency range of one kilohertz to one hundred megahertz with an attenuation of twenty to forty decibels.

Examination of Voting Device
Report by Secretary of State

This office also recommends that any county contemplating purchase of this system consult one or more of the jurisdictions on the enclosed listing prior to purchase, in order to obtain information regarding how the system operates in practice.

Done this 15th Day of April, 1985.

RALPH MUNRO
Secretary of State