721—22.39(52) Public testing for direct recording electronic voting machines. Before each election in which direct recording electronic (DRE) voting machines are used, the commissioner shall conduct public testing.

22.39(1) *Automatic testing.* Some vendors provide an automatically generated test program for DRE voting machines. Although these tests provide the user with information about the internal integrity of the machine, the automatic test is not an adequate test; it does not include testing to show that the programming for the current election is correctly done; and it does not test the voter-operated functions of the machine.

22.39(2) *Testing personnel.* DRE voting machine testing shall be conducted by authorized employees of the commissioner, who may work in two-person teams. The process and results of the test shall be carefully documented and shall be available for inspection.

22.39(3) *Test process.* Each two-person team shall follow a written plan, with one person operating the DRE voting machine and another person observing and verifying that the correct actions were taken. The tests shall be conducted as follows for each machine:

a. *Automated test.* Run the automated test on each machine and record the results.

b. *Visual test.* Verify that the correct visual ballot (and audio ballot, if any) is installed for each machine to be used in the election.

c. *Testing in election mode.* If the voting system provides for both a test mode and an election mode, the following portions of the public test shall be conducted with the DRE voting machine in election mode.

(1) Before beginning the test, print a zero totals report.

(2) Touch test. As each visual ballot (and audio ballot, if any) is reviewed, select and then deselect each candidate to verify that the candidate can be selected as a choice.

(3) Accuracy test. Use each voting method (visual, audio, etc.) available to conduct the accuracy test. Prepare a written test plan to guide the entry of votes into the machine. This test shall be conducted as follows:

1. Record votes for each candidate for an office, including offices to which more than one person will be elected, with each candidate receiving a different number of votes. For example, the first candidate may receive one vote; the second candidate may receive two votes; the third candidate may receive three votes; and so on.

2. For offices to which more than one candidate will be elected, test each combination of candidates in addition to the test in numbered paragraph "1," above.

3. For each public measure and judge on the ballot, the "YES" position shall receive one vote and the "NO" position shall receive two votes, or vice versa.

4. Test every write-in position by selecting it at least once. Enter at least ten letters of the alphabet in the appropriate place. In the test, use all of the letters to make sure they function correctly. For offices with more than one person to be elected, test all of the write-in positions at the same time.

5. Attempt to overvote every office on the ballot.

6. For primary elections, verify that the voter may cast votes for the candidates of only one political party.

7. For general elections, test each straight party voting option separately from the tests listed in numbered paragraphs "1" through "5," above. Prepare a written plan to test the straight party voting option as follows:

● Assign a specific number of votes to each straight party option, such as one vote to the first straight party option, two votes to the second, and so on.

● For each straight party choice, select the straight party option, then, for each affected office, select the write-in option and write the name of the straight party choice being changed.

● Mark no other votes on this set of test ballots.

8. Print the results of the machine tabulation and compare the results with the written test plan. If there are differences, the cause of the discrepancy shall be determined. If the cause of the discrepancy cannot be determined and corrected, the program or equipment shall not be used at the election.

d.   Electronic transmission. If the results will be transmitted electronically from the precincts on election night, the commissioner shall test each modem before election day by transmitting test results to the election reporting software. It is not necessary to perform this test at the polling places. However, before election day the commissioner should also determine the location and suitability of the telephone connections in polling places.

e.   Compilation of results. The commissioner shall compile the results of all tests using the voting system's election reporting programs to demonstrate that the election reporting function will function correctly on election night and for the canvass of votes.

22.39(4) *Public participation.* The commissioner shall provide notice of public testing of DRE voting machines to the chairpersons of the political parties and to the public as required by Iowa Code section 52.9. The commissioner shall allow a reasonable amount of time for public participation. Members of the public, working with a person designated by the commissioner, may also provide a written test plan and test the operation of the DRE voting machines. Each person present at the test must sign a certificate of test, as required by Iowa Code section 52.9.

22.39(5) *Concluding the test.* Testing must be completed not less than 12 hours before the polls open on election day. Following the test, the commissioner shall print a zero totals report, apply all required locks and seals to each DRE voting machine, and record the seal numbers on the appropriate documents.

This rule is intended to implement Iowa Code section 52.9.