

PRO V&V



**COMMONWEALTH OF PENNSYLVANIA
TEST REPORT
FOR
EXAMINATION OF THE
ELECTION SYSTEMS & SOFTWARE (ES&S) EVS 5.2.0.0**

Prepared by: _____

A handwritten signature in black ink that reads 'Jack Cobb'.

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July 19, 2016

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1.0 INTRODUCTION

An examination was performed to confirm that the Election Systems and Software (ES&S) EVS 5.2.0.0 voting system met the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22. This examination was performed per the direction of the Secretary of the Commonwealth, acting through the Pennsylvania Department of State, Bureau of Commissions, Elections and Legislation. This test report documents the procedures followed, the results obtained, and the conclusions drawn from that examination.

After the examination, ES&S submitted EVS 5.2.0.3 as a modification to EVS 5.2.0.0 to correct an issue with the RSA encryption that was found during testing in Maryland.

1.1 References

The documents listed below were used in the development of the Test Protocol.

- Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22
- Election Assistance Commission (EAC) 2005 Voluntary Voting System Guidelines (VVSG)
- Help America Vote Act (HAVA) of 2002, Public Law 107-252, 42 U.S.C. § 15301 *et seq.*
- Pro V&V, Inc. Test Protocol for Examination of the Election Systems and Software (ES&S) EVS 5.2.0.0

1.2 Terms and Abbreviation

This subsection lists terms and abbreviations relevant to this examination

“COTS” – Commercial Off-The-Shelf

“Department” – Pennsylvania Department of State

“EMS” – Election Management System

“Examiner” – The examiner appointed by the Secretary of the Commonwealth to conduct the examination

“GEMS” – ES&S election management system

“PA” – The Commonwealth of Pennsylvania

“Pennsylvania Election Code” - Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22

“Secretary” – The Secretary of the Commonwealth

“TDP” – Technical Data Package

“VAT” –Voter Assist Terminal

“VSS” – Federal Election Commission 2002 Voting System Standards

“VVSG” – Election Assistance Commission 2005 Voluntary Voting System Guidelines

1.3 Background

ES&S initiated the certification evaluation by a letter to the Pennsylvania Department of State on July 16, 2014. In this letter, ES&S requested certification of the EVS 5.2.0.0 as a new voting system to be certified for use in the Commonwealth of Pennsylvania. On July 2, 2014 the Election Assistance Commission (EAC) issued their Grant of Certification of the EVS 5.2.0.0, signifying successful completion of conformance testing to the 2005 *EAC Voluntary Voting System Guidelines (VVSG)*. This system was issued ESSEVS5200 EAC Certification Number.

A modification was submitted to the Pennsylvania Department of State in September 2015. This modification was to ensure compatibility between the COTS cryptography library from RSA SAFE and the Microsoft Crypto library. On August 5, 2015 the Election Assistance Commission (EAC) issued their Grant of Certification of the EVS 5.2.0.3, signifying successful completion of conformance testing to the 2005 *EAC Voluntary Voting System Guidelines (VVSG)*. This system was issued ESSEVS5203 EAC Certification Number.

The modifications to the baseline system (EVS 5.2.0.0) resulted in updated ElectionWare and Election Reporting Manager (ERM) software for the EVS 5.2.0.3. These updates were analyzed and were determined that they would have no negative impact on the testing that was performed; therefore, the results obtained during the execution of testing on EVS 5.2.0.0 would not differ if tested on EVS 5.2.0.3, Pro V&V believes the results should not be substantially different from the test results encountered in the certification effort documented in this report. Because the vendor demonstrated EVS 5.2.0.0, the version numbers throughout this report will reflect that version; however, the examiner believes that EVS 5.2.0.3 can be certified based on the demonstration of the 5.2.0.0.

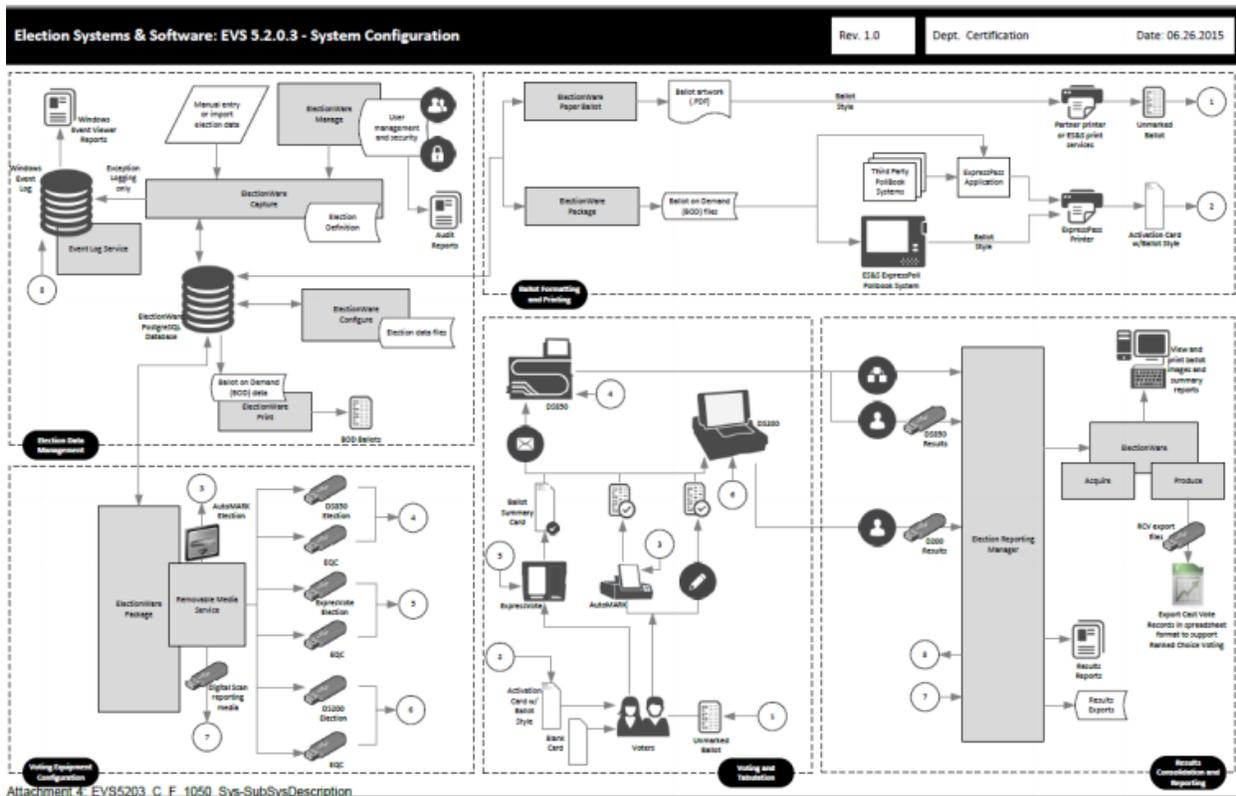
2.0 SYSTEM OVERVIEW AND IDENTIFICATION

The EVS 5.2.0.0 voting system is a paper based voting system comprised of both precinct and central count tabulators and a Ballot Marking Device as an ADA component. Below is a table representing the components that comprise the entire EVS 5.2.0.0 system categorized into the system functionality they provide:

Pennsylvania State Certification of EVS 5.2.0.0		
EAC Certified: 7/2/2014 (ESSEVS5200) Compliance: 2005 VVSG		
Election Management System (EMS)	ElectionWare	4.6.0.0
	Event Log Service	1.5.5.0
	Removable Media Service	1.4.5.0

Election Management System (EMS) (continued)	Election Reporting Manager (ERM)	8.11.0.0
	VAT Previewer	1.8.6.0
	ExpressVote Previewer	1.4.0.0
ES&S Tabulators	DS200 Precinct Tabulator (HW 1.2, 1.3)	2.12.0.0
	DS850 Central Tabulator (HW 1.0)	2.10.0.0
Voter Assist Terminal	AutoMARK (HW 1.0, 1.1, & 1.3)	1.8.6.0
Universal Voting System	ExpressVote (HW 1.0)	1.4.0.0

Below is the System Overview Diagram that provides a visual system overview:



The EVS 5.2.0.0 voting system includes the following components:

- **ElectionWare**

ElectionWare is the Election Management System (EMS) software that provides end-to-end election management activities for the EVS 5.2.0.0 System. This includes defining contests, candidates and ballot formats and performing post-election results processing. The VAT Previewer and ExpressVote Previewer within the ElectionWare software provides jurisdictions the ability to preview the on-screen display and audio prompts prior to generating Election Day media.

- **DS850 Central Tabulator**

The DS850 is the central ballot scanner component of the EVS 5.2.0.0 voting system. The DS850 features an S-Curve design that guides the ballot through the scanning process and produces a digital image of the ballot or ExpressVote card for later viewing in the ElectionWare software. The vote data is captured on USB devices (the EAC test campaign certified the use of the Delkin USB flash drive in 512MB, 1GB, 2GB, and 8GB sizes) and transported to ElectionWare for viewing.



Photograph 1: DS850 Central Tabulator

- **DS200 Precinct Tabulator**

The DS200 is the precinct ballot scanner component of the EVS 5.2.0.0 voting system. The DS200 scans voter selections from both sides of the ballot simultaneously, immediately tabulates the selections, and creates and stores a digital image of the ballot or ExpressVote card for later viewing in the ElectionWare software. It is capable of scanning a variety of ballot sizes and uses mark recognition technology to determine what constitutes a mark for a candidate. Data from scanned ballots is stored to a removable USB memory device (the EAC test campaign certified the use of the Delkin USB flash drive in 512MB, 1GB, 2GB, and 8GB sizes) that is transported to a central election location for vote consolidation and reporting. Additionally, the DS200 may be configured for use with an attached ballot box.

The DS200 includes a large touch screen for voter communication, an integrated thermal printer, and an internal battery pack. Displayed on the touchscreen is basic information such as: Public Counter, Private Counter, and the title of the election (including the county/state/election date). This information is all configurable in ElectionWare. Other icons that are visible are the language icon and the admin icon. During the voting session, any warnings for overvotes/undervotes are displayed. After the ballot has been cast and processed a “Thank You for Voting/Ballot Successfully Cast”. This message is also configurable.



Photograph 2: DS200 Central Tabulator

- **ExpressVote Universal Voting Systems**

The ExpressVote Universal System is a universal vote capture device designed to be used in all elections by all voters, including those with disabilities. The ExpressVote combines paper-based voting with touchscreen technology. The ExpressVote provides the ability for a voter to use touchscreen technology, and provides audio prompts with attachable keypad for use to input votes. The ExpressVote also provides features such as the ability to zoom, a contrast feature, and a binary input for a tactile input (two-switch toggle, sip-n-puff, etc.). It permits the voter to select ballot choices via the touchscreen, and prints a paper record containing a QR Code and a summary of the ballot selections that are digitally scanned and immediately tabulated by either the DS200 or DS850 ballot scanners. The tabulators read the voter’s selections from the QR code. The QR codes are not unique to an individual ballot, but are unique to how a ballot is marked; therefore, a ballot marked the same will have the same QR code. Optionally, a scanner can be attached to the ExpressVote to scan QR Codes. These codes are produced outside the system,

e.g. on a voter's home computer, but can be read to retrieve a marked ballot presented to the voter the same as all other ExpressVote ballots.

The ExpressVote tested as part of this test engagement is a first generation ExpressVote with ballot marking capability only. Based on results obtained during previous certification test campaigns, it is estimated that the ExpressVote, when configured as an ADA device, is capable of accommodating approximately 15 ballots per hour throughout a typical 13-hour election day.



- **ES&S AutoMARK**

The ES&S AutoMARK is a ballot marking system that supports audio, touchscreen and tactile keypad inputs for ballot marking. The AutoMARK ballot marking devices accept a pre-printed ballot and uses touchscreen technology to navigate the ballot. Once all selections have been verified the AutoMARK then fills in the ovals the voter selected. The ballot is then printed. The DS200 and the DS850 read and tabulate the ballot just like all other ballots.



The EVS 5.2.0.0 can be deployed in various configurations. Each configuration of the EVS 5.2.0.0 must contain the following: the ElectionWare EMS software, the Election Reporting Manager EMS software, a tabulation device (either a DS200 or a DS850), and an ADA device (either an AutoMark or an ExpressVote). A full deployment of the system would be as follows:

- ElectionWare, DS200 precinct tabulation device and an AutoMark ADA device with a DS850 central tabulation device
- ElectionWare, DS200 precinct tabulation device and an ExpressVote ADA device with a DS850 central tabulation device
- ElectionWare, an AutoMark ADA device with a DS850 central tabulation device
- ElectionWare, an ExpressVote ADA device with a DS850 central tabulation device

A Test Protocol was developed to ascertain whether the components complied with the requirements set forth in the Pennsylvania Election Code. This Test Report documents the procedures followed, the results obtained, and the conclusions drawn from that examination.

2.1 Software

The software listed in Table 2.1 was used during the examination of the voting system. Table 2.1 provides the component name, software/firmware version, and a SHA-1 Hash, if calculated, during the examination.

Table 2.1 Software

Component Name	Version	Unique Identifier (SHA-1)
Election Management System (EMS)		
ElectionWare	4.6.0.0	80da09dc2160c77e3bb6a5e681eba8bf0d3f2e85
Election Reporting Manager (ERM)	8.11.0.0	0ab56a2d6644f76d40952b14880e26fb6c097dc3
Removable Media Service	1.4.5.0	0d64a53637826371bcc208513a59b34fcb46c4db
Event Log Service	1.5.5.0	ddd3375372948d04ee9f4ef179a7e451d9a8694e
VAT Previewer	1.8.6.0	10d2cd51fb97197949310ee9595f9e79d5392105
ExpressVote Previewer	1.4.0.0	b11367f0f4f3405cf415161ac002e9a0d86fba3c
ES&S Tabulators		
DS850 Central Tabulator	2.10.0.0	edf012ba5fdf9402b80f1c4b1f76350a99ea8742
DS200 Precinct Tabulator	2.12.0.0	32273db7fb95f2f63a83114178dd0fed0f4267ad
Voter Assist Terminal (VAT)		
AutoMARK	1.8.6.0	fbfd976f4a4d05ad4e8ba21b50ae068e01a6b317
Universal Voting System		
ExpressVote	1.4.0.0	634335e22d64da2af133eb74df15ec2c96abb8f4

For each device being evaluated, a trusted build of the software/firmware was obtained from the VSTL and installed by the Examiner prior to the evaluation using the appropriate media for installation (compact flash, USB).

2.2 Hardware

Table 2.2 provides hardware component name, description, and model and/or version number for the units that were examined.

Table 2.2 Hardware

Component Name	Model/Version Number	Description
DS850 Central Tabulator	1.0	central ballot scanner for tabulation of mail-in ballots, absentee ballots or Election Day ballots
DS200 Precinct Tabulator	1.2,1.3	precinct ballot scanner component of the voting system
AutoMARK	1.0, 1.1, 1.3	ADA-compliant ballot marking device
ExpressVote	1.0	universal voting solution that provides voters with disabilities the same voting experience as others

2.3 Peripherals

Table 2.3 provides the information for the peripheral components used during the examination.

Table 2.3 Peripherals

Part Name	Model/Version Number	Description
Okidata	C711	Ballot on Demand Printer
ExpressPass	1.1.0.0	Software utility to print activation cards
Toolbox	2.1.0.0	Software utility to make audio files

ExpressPass Printer	Microcon	ExpressPass printer
ExpressVote Peripherals	various	Headphones, keypad, QR scanner, sip-n-puff, rocker paddles
AutoMARK Peripherals	various	Headphones, rocker paddles, stylus, sip-n-puff

2.4 Test Support Equipment/Materials

The test support materials listed in Table 2.4 were used during the examination.

Table 2.4 Test Support Materials

Part Name	Model/Version Number	Description
Paper Rolls	N/A	Paper of the scanners
USB Thumb Drives	N/A	Transport media
ExpressVote Card Stock	N/A	Paper of the ExpressVote
ES&S Pen	N/A	Official marking device
Compact Flash	N/A	Transport media

2.5 Technical Data Package

The Technical Data Package (TDP) provided by the manufacturer that is relevant to the system that was tested is listed in Table 2.5.

Table 2.5 Technical Data Package

Document Name	Version/Document Number	Revision	Issue Date
<i>1: System Overview</i>			
System Overview ES&S Voting System 5.2.0.0	---	9.0	4.22.2014
<i>2: Operation Manuals</i>			
AutoMARK System Operator's Guide	4.0	---	4.7.2014
DS200 Operator's Guide	6.00	---	4.18.2014
DS850 Operator's Guide	4.0	---	2.26.2014
ES&S EVS Event Logging Service User's Guide	3.0	---	2.26.2014
Election Reporting Manager User's Guide	7.0	---	4.2.2014
ElectionWare Volume I: Administrator Guide	4.0	---	4.24.2014
ElectionWare Volume II: Define User's Guide	5.0	---	4.25.2014
ElectionWare Volume III: Design User's Guide	3.0	---	4.25.2014
ElectionWare Volume IV: Deliver User's Guide	4.0	---	2.21.2014
ElectionWare Volume V: Results User's Guide	2.0	---	2.21.2014
ExpressPass Operator's Guide	4.0	---	3.20.2014
ExpressVote Operator's Guide	4.0	---	3.20.2014
Network Setup Guide ES&S Voting System 5.2.0.0	---	1.2	4.15.2014
<i>3: Training</i>			
ES&S Standards and Procedures Personnel Deployment and Training Program	---	3.0	12.20.2013

<i>4: Setup and Repair Maintenance</i>			
DS850 Maintenance Guide	3.0	---	2.26.2014
AutoMARK System Maintenance Manual	2.1	---	4.4.2014
DS200 Maintenance Guide	2.0	---	2.14.2014
ExpressVote Maintenance Guide	2.3	---	2.7.2014
<i>5: System Security</i>			
Voting System Security Specification ES&S Voting System 5.2.0.0	---	4.0	2.21.2014
Hardening Procedures for the Election System ES&S Voting System 5.2.0.0	---	1.2	1.10.2014
AutoMARK System Security Specifications	AQS-18-5002-001-S	6	10.23.2013

2.6 Third Party Test Reports

The reports provided by third party entities that are relevant to the system that was evaluated are listed in Table 2.6.

Table 2.6 Third Party Test Reports

Report Title	Report No.	Issue Date
NTS Huntsville Operations Test Report: “Test Report for EAC 2005 VVSG Certification Testing Performed on Election Systems & Software Voting System 5.2.0.3” EAC Certification Number – ESSEVS5203 (<i>‘NTS 5.2.0.3 Report’</i>)	PR038098-01 Rev A	August 5, 2015
NTS Huntsville Operations Test Report: “National Certification Test Report for Certification Testing of the Election Systems and Software EVS 5.2.0.0 Voting Systems, EAC Certification Number – ESSEVS5200, Revision B” (<i>‘NTS 5.2.0.0 Report’</i>)	T71379.01-01 Rev B	June 20, 2014
Wyle Laboratories, Inc Test Report: “National Certification Test Report for Certification Testing of the Election Systems and Software EVS 5.0.0.0 Voting Systems, EAC Certification Number – ESSEVS5000 (<i>‘Wyle 5.2.0.0 Report’</i>)	T59087.01-01 Rev A	May 1, 2013

3.0 TEST PROCESS

3.1 General Information

The examination of the previously identified voting system was performed by Mr. Jack Cobb of Pro V&V, Inc. (the “Examiner”), per the direction of the Secretary of the Commonwealth, acting through the Pennsylvania Department of State, Bureau of Commissions, Elections and Legislations. The examination commenced on September 8, 2014, at the Commonwealth Keystone Building, Training Room 125B, 400 North Street, Harrisburg, Pennsylvania. The demonstration portion of the examination lasted approximately three days.

All software and hardware necessary to perform the examination was received from the VSTL (NTS). This included the trusted builds of the firmware for each device being evaluated. The firmware was then installed by the Examiner prior to the examination, using the appropriate media for installation.

3.2 Test Approach

To achieve the objective of this examination, the Examiner performed a review of the submitted test documentation, as identified in the Test Protocol. Following this review, the Examiner developed test cases designed to confirm that the submitted voting system met the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22. The Examiner separated the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22, into four main areas of test execution: (1) Review; (2) Targeted Functionality; (3) System Integration; and (4) Penetration Analysis. The “Review” testing consisted of analyzing VSTL Reports, VSTL test documentation and source code for specific tests that satisfied the requirements of the Pennsylvania Election Code and verifying that the EVS 5.2.0.3 Voting System met those requirements. . The Examiner specifically reviewed the VSTL report “Security Assessment Summary Report for ES&S EVS 5.0.0.0 System date 03-11-2013 that detailed the system security testing performed to assess compliance with VVSG 2005 security requirements, The Examiner did not perform additional security testing on the system or software of individual components or on the system as a whole other than detailed in the test cases below.

The “Targeted Functionality” testing sought to ascertain whether the EVS 5.2.0.0 Voting System met all of the requirements of the Pennsylvania Election Code that could be met by execution of a single thread test case. The “System Integration” testing sought to ascertain whether the voting system, when configured as a complete system, including each of the possible configurations, met all of the requirements of the Pennsylvania Election Code in the context of the execution of an entire election. General and closed-primary election definitions were devised and run for the pre-voting, voting, and post-voting functions of the voting system. The “Penetration Analysis” testing sought to ascertain whether the EVS 5.2.0.0 Voting System met all of the requirements of the Pennsylvania Election Code that could be met by analyzing physical security procedures and impoundment of ballots. Precinct tabulation devices were installed for delivery to the precinct, and analysis of the security procedures performed.

In addition to the examination, the Examiner performed a comparative source code review of all source code from EVS 5.2.0.0 to EVS 5.2.0.3. This review was performed to examine the effects of software modifications on previous security testing. The only security related concern revealed during the source code review was a change to the modem functionality. This security concern should not impact the system submitted to the Commonwealth of Pennsylvania since the Commonwealth does not allow voting devices to be connected to an external network. During the demonstration of the system to DOS, the modem functionality was explicitly discussed and ES&S was informed that the configuration that was being certified for use in Pennsylvania would not be allowed to connect to a modem.

3.3 Election Definitions

The election definitions used for the examination are provided in Attachment A of this Test Report. A predefined set of election parameters are included in the election definitions. These election definitions were designed to exercise all contest types, voting variations, and possible voting patterns used in the Commonwealth of Pennsylvania. Some of variations include Cross-Party Filed Candidates, N of M contests, Write-In voting, Primary Presidential Delegation Nominations, Retention contest, Straight Party voting, Split Precincts, and both Spanish and English. Both the general election and the closed primary election definitions provide the voting variations, geographic subdivisions, parties, supported languages and test voting pattern with results being tested. The only languages required for this examination were English and Spanish. The Department provided the Spanish translation. Each test voting pattern provided the input method and device. For all Write-In selections, the name was input as “John Doe.” For multiple Write-In selections, the name was appended with the character “I” for the number of Write-In selections (*i.e.*, “John Doe I,” “John Doe II,” “John Doe III,” and “John Doe IV” in a “Vote for Four” contest with four write-ins).

3.4 Review

A review of the NTS report “National Certification Test Report for Certification Testing of the Elections Systems & Software EVS 5.2.0.0 dated June 20, 2014 (NTS 5.2.0.0 Report) and the NTS report “Test Report for EAC 2005 VVSG Certification Testing Performed on Election Systems & Software Voting System 5.2.0.3” (NTS 5.2.0.3 Report) was conducted by the Examiner. The purpose of this review was to determine if EVS 5.2.0.0 was evaluated in the Federal Test Campaign for the Pennsylvania Election Codes listed below. The 5.2.0.3 uses the same components as the 5.2.0.0, as listed in the report in Section 2.0, with software changes to ElectionWare and ERM reporting component.

- 25 P.S. § 3031.5(a) *“ha[ve] been examined and approved by a federally recognized independent testing authority” and that it “meet any voting system performance and test standards established by the Federal Government;”*
- 25 P.S. § 3031.7(11) *Is suitably designed for the purpose used, is constructed in a neat and workmanlike manner of durable material of good quality, is safely and efficiently useable in the conduct of elections and, with respect to the counting of ballots cast at each district, is suitably designed and equipped to be capable of absolute accuracy, which accuracy shall be demonstrated to the Secretary of the Commonwealth.*
- 25 P.S. § 3031.7(13) *When properly operated, records correctly and computes and tabulates accurately every valid vote registered.*
- 25 P.S. § 3031.7(14) *Is safely transportable.*
- 25 P.S. § 3031.7(15) *Is so constructed that a voter may readily learn the method of operating it.*

The design requirements of Sections 3031.7(11) and (14) and the accuracy requirements of Sections 3031.7(11) and (13) of the Pennsylvania Election Code were met by a documented Product Safety Test and Accuracy Test. The specific transportation requirements of Section 3031.7(14) of the Election Code were met by the combination of documented Hardware Non-Operating Environmental Tests which included: bench handling, vibration, low temperature, high temperature, and humidity. Below is Table 4-3 from the NTS 5.2.0.0 report page 31:

Table 4-3 Hardware Test Examination Results

Test/EAC 2005 VVSG Section	Procedure/Description	EVS 5.2.0.0 DS200 HW 1.3 & ExpressVote HW 1.0
<i>Electromagnetic Radiation/4.1.2.9</i>	FCC Part 15 Class B for both radiated and conducted emissions	Accept FL EVS 4.5.0.0
<i>Low Temperature/4.1.2.14</i>	MIL-STD-810D minimum temperature shall be -4°F	Accept FL EVS 4.5.0.0
<i>Vibration/4.1.2.14</i>	MIL-STD-810D, Method 514.3 physical shock and vibration during handling and transport	Accept FL EVS 4.5.0.0
<i>Lightning Surge/4.1.2.7</i>	IEC 61000-4-5 (1995-02)	Accept FL EVS 4.5.0.0
<i>High Temperature/4.1.2.14</i>	MIL-STD-810D, Method 501.2 maximum temperature shall be 140°F	Accept FL EVS 4.5.0.0
<i>Bench Handling</i>	MIL-STD-810D, Method 516.3 Procedure VI six 4" drops on each edge totaling 24 drops	Accept FL EVS 4.5.0.0
<i>Electrical Fast Transient/4.1.2.6</i>	IEC 61000-4-4 (2004)	Accept FL EVS 4.5.0.0
<i>Humidity Test/4.1.2.14</i>	MIL-STD-810D, Method 501.2 ten 24 hour humidity cycles	Accept FL EVS 4.5.0.0
<i>Electrostatic Disruption/4.1.2.8</i>	IEC 61000-4-2 (1995-01) 15kV air discharge and 8kV contact discharge	Accept FL EVS 4.5.0.0
<i>Electromagnetic Susceptibility/4.1.2.10</i>	IEC 61000-4-3 (2006) electromagnetic field of 10V/m modulated by a 1kHz, 80% AM modulation at 80MHz to 1000MHz frequency	Accept FL EVS 4.5.0.0
<i>Conducted RF Immunity/4.1.2.11</i>	IEC 61000-4-6 (1996-04) conducted radio frequency energy	Accept FL EVS 4.5.0.0
<i>Magnetic Fields Immunity/4.1.2.12</i>	IEC 61000-4-8 (1993-06) AC magnetic fields of 30 A/m at 60Hz	Accept FL EVS 4.5.0.0
<i>Electrical Power Disturbance/4.1.2.5</i>	IEC 61000-4-11 (1994-06) power surges and dips	Accept FL EVS 4.5.0.0
<i>Temperature/Power Variation/4.1.2.13</i>	MIL-STD-810D, Method 502.2 and Method 501.2 163 hours at 50°F to 95°F	Accept FL EVS 4.5.0.0
<i>Safety/4.3.8</i>	UL 60950-1 product safety review	Accept FL EVS 4.5.0.0

The submitted reports contain specific data for an Accuracy Test. Below is Table 4-7 and 4-8 from the NTS 5.2.0.0 report page 32:

Table 4-7 EVS 5.2.0.0 Accuracy DS200

Ballot Size	No. of Ballots	No. Vendor Marked	No. Hand Marked	No. Ballot Positions per Ballot	No. of Machines in Test	X Voted=	Total Ballot Positions	Total Ballots
11 inch	100	30	70	392	3	2	235,200	600
14 inch	100	30	70	512	3	2	307,200	600
17 inch	100	30	70	640	3	2	384,000	600
19 inch	100	30	70	720	3	3	648,000	900
Total	400	120	280	N/A	N/A	9	1,574,400	2700

Table 4-8 EVS 5.2.0.0 Accuracy ExpressVote

Ballot Size	No. of Cards	No. of ExpressPass cards with activation bar codes per unit	No. of blank ExpressVote cards per unit	No. Ballot Positions per Ballot	No. of Machines in Test	Total Ballot Positions	Total Cards
11 inch	100	10	90	800	5	400,000	500
14 inch	100	10	90	800	5	400,000	500
17 inch	95	10	85	800	5	380,000	475
19 inch	95	10	85	800	5	380,000	475
Total	390	40	350	N/A	N/A	1,560,000	1950

Summary Findings

The EVS 5.2.0.0 Voting System successfully met the requirements of the Data Accuracy Test by scanning and processing at least 1,549,703 ballot positions.

The submitted reports contain specific data for summative usability test reports. The information pertaining to the DS200 and the AutoMARK are cited in Appendix A.12 of NTS 5.0.0.0 Report. The information pertaining to the ExpressVote is cited in Appendix K of the NTS 5.2.0.0 Report to meet the requirements set forth in 25 P.S. § 3031.7(15). In addition, the review verified that the system complied with “EAC Decision on Request for Interpretation 2008-07” to ensure the removal of residual vote and verification of “Zero Proof Reports”. This system only produces a zero proof report on the opening of polls and the zero proof report cannot be reproduced once a ballot is cast. The conclusion of the Examiner, after reading these reports, is that this system is suitable for use.

3.5 Targeted Functionality

To achieve the objective of this examination, the Examiner designed test cases to ensure that each component of the EVS 5.2.0.0 met the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22.

Test Cases

Each set of test cases were performed by the Examiner on-site during the examination. The test cases tested were designed to assess the applicable portions of the Pennsylvania Election Code. The test sequence for this examination was as follows:

DS850 Central Tabulator

- Test Case Identifier: 02 – 1107-A(2), 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)
- Test Case Identifier: 03 – 1107-A(3), 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method
- Test Case Identifier: 04 – 1107-A(4), 25 P.S. § 3031.7(4) Straight Party and Write-In
- Test Case Identifier: 05 – 1107-A(5), 25 P.S. § 3031.7(5) Selection of Candidate and Write-in
- Test Case Identifier: 07 – 1107-A(7), 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)
- Test Case Identifier: 17 – 1107-A(17), 25 P.S. § 3031.7(17) Public Counter, No Reopening of Polls, Media Security with Tamper Proof Locks and Zero Proof and Tally Reports
- Test Case Identifier: Central Count Processing

DS200 Precinct Tabulator

- Test Case Identifier: 02 – 1107-A(2), 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)
- Test Case Identifier: 03 – 1107-A(3), 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method
- Test Case Identifier: 04 – 1107-A(4), 25 P.S. § 3031.7(4) Straight Party and Write-In
- Test Case Identifier: 05 – 1107-A(5), 25 P.S. § 3031.7(5) Selection of Candidate and Write-in
- Test Case Identifier: 07 – 1107-A(7), 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)
- Test Case Identifier: 10 – 1107-A(10), 25 P.S. § 3031.7(10) Ballot Review and Change
- Test Case Identifier: 16 – 1107-A(16), 25 P.S. § 3031.7(16) Public Counter, No Reopening of Polls, Media Security with Tamper Proof Locks and Zero Proof and Tally Reports

ES&S AutoMARK

- Test Case Identifier: 01 – 1107-A(1), 25 P.S. § 3031.7(1) Voter Secrecy (ADA Voter)

- Test Case Identifier: 02 – 1107-A(2), 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)
- Test Case Identifier: 03 – 1107-A(3), 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method
- Test Case Identifier: 04 – 1107-A(4), 25 P.S. § 3031.7(4) Straight Party and Write-In
- Test Case Identifier: 05 – 1107-A(5), 25 P.S. § 3031.7(5) Selection of Candidate and Write-in
- Test Case Identifier: 07 – 1107-A(7), 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)
- Test Case Identifier: 10 – 1107-A(10), 25 P.S. § 3031.7(10) Ballot Review and Change (Regular/ADA)

ExpressVote Universal Voting Systems

- Test Case Identifier: 01 – 1107-A(1), 25 P.S. § 3031.7(1) Voter Secrecy (ADA Voter)
- Test Case Identifier: 02 – 1107-A(2), 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)
- Test Case Identifier: 03 – 1107-A(3), 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method
- Test Case Identifier: 04 – 1107-A(4), 25 P.S. § 3031.7(4) Straight Party and Write-In
- Test Case Identifier: 05 – 1107-A(5), 25 P.S. § 3031.7(5) Selection of Candidate and Write-in
- Test Case Identifier: 07 – 1107-A(7), 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)
- Test Case Identifier: 10 – 1107-A(10), 25 P.S. § 3031.7(10) Ballot Review and Change (Regular/ADA)

ElectionWare

The objective of this test case was to examine the election management system for compliance with 25 P.S. § 3031.7(2), 25 P.S. § 3031.7(3), 25 P.S. § 3031.7(4), 25 P.S. § 3031.7(5), 25 P.S. § 3031.7(6), 25 P.S. § 3031.7(9), 25 P.S. § 3031.7(11), 25 P.S. § 3031.7(12) and 25 P.S. § 3031.7(13).

- Test Case Identifier: Election Management System (EMS)

Appendix B contains the details of the as-run test cases performed on the EVS 5.2.0.0 Voting System components. The test cases were executed independently and in random order.

4.0 TEST FINDINGS AND RECOMMENDATIONS

As set forth in the Test Protocols published before the Examination, nine test cases were designed to determine compliance with the requirements of 25 P.S. §§ 3031.7(1), (2), (3), (4), (5), (7), (10) and (16). The Examiner conducted each of these tests, with necessary modifications as discussed below. The following is a list of the individual test cases and a summary of the results and observations for each test case.

4.1 ElectionWare

Test Case Identifier: Election Management System (EMS)

This test case was designed to evaluate the ability of the election management system to support the requirements of 25 P.S. § 3031.7. The election functions being evaluated are: ballot layout and design; voting variation support; hardware programming; and accumulation and reporting of voted data. The ElectionWare Election Summary and Precinct Summary Reports were generated for this end-to-end test. The method for testing these requirements was execution and inspection. The election management system was utilized to create elections containing specific voting variations, contests, and candidates required by 25 P.S. § 3031.7. In addition, an inspection was performed on the product labeling of the election management system PC or laptop and security measures for the operating system and access controls to the PC or laptop.

Summary Findings: No issues or anomalies were noted during the execution of this test case. The actual results obtained during execution met the expected results. *See* page 101 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes that the EMS supports the requirements set forth section 1107-A of the Pennsylvania Election Code, 25 P.S. § 3031.7.

4.2 DS850 Central Tabulator

Test Case Identifier: 02 – 1107-A(2), 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)

This test case was designed to test for compliance with 25 P.S. § 3031.7(2), which requires that a voting system “provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.” This test case ensures a vote for a candidate for “1 of 1,” “N of M,” and “Question” contests could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The DS850 Central Tabulator successfully recorded and reported votes for “1 of 1,” “N of M,” and “Question” contests. The actual results obtained during execution met the expected results. *See* page 84 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes that the DS850 Central Tabulator meets the requirements of Section 1107-A(2) of the Pennsylvania Election Code, 25 P.S. § 3031.7(2).

Test Case Identifier: 03 – 1107-A(3), 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method

This test case was designed to test for compliance with 25 P.S. § 3031.7(3), which requires that a voting system allow a voter to perform straight-party voting according to the “Pennsylvania Method.” This test case was designed to ensure that a straight-party selection and the Pennsylvania Method of straight-party voting could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the DS850 Central Tabulator successfully recorded and reported straight-party votes and demonstrated the Pennsylvania Method of straight-party voting. The actual results obtained during execution met the expected results. *See* page 86 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes that the DS850 Central Tabulator meets the requirements of Section 1107-A(3) of the Pennsylvania Election Code, 25 P.S. § 3031.7(3).

Test Case Identifier: 04 – 1107-A(4), 25 P.S. § 3031.7(4) Straight Party and Write-In

This test case was designed to test for compliance with 25 P.S. § 3031.7(4), which requires that a voting system permit a voter to vote for a candidate of his or her choice through a straight-party or write-in voting. This test case ensures that both a straight-party and write-in selection could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the DS850 Central Tabulator successfully recorded and reported straight-party and write-in votes. The actual results obtained during execution met the expected results. *See* page 89 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded the DS850 Central Tabulator meets the requirements of Section 1107-A(4) of the Pennsylvania Election Code, 25 P.S. § 3031.7(4).

Test Case Identifier: 05 – 1107-A(5), 25 P.S. § 3031.7(5) Selection of Candidate and Write-in

This test case was designed to test for compliance with 25 P.S. § 3031.7(5), which requires that a voting system permit a voter to vote for any candidate or write-in a candidate. This test case ensures that a candidate and write-in selection could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case the DS850 Central Tabulator successfully recorded and reported candidate selections and write-in votes. The actual results obtained during execution met the expected results. *See* page 92 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded the DS850 Central Tabulator meets the requirements of Section 1107-A(5) of the Pennsylvania Election Code, 25 P.S. § 3031.7(5).

Test Case Identifier: 07 – 1107-A(7), 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)

This test case was designed to test for compliance with 25 P.S. § 3031.7(7), which requires that a voting system prevent a voter from over voting. This test case ensures that a voter could not over vote for a contest or question during a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The DS850 Central Tabulator successfully has the ability to “outstack” ballots that have more than the number of allowable selections, including write-in votes. The actual results obtained during execution met the expected results. *See* page 94 of Attachment B. The objective criteria for evaluation were analyzed and the system met the criteria. Therefore, the Examiner concluded the DS850 Central Tabulator meets the requirements of Section 1107-A(7) of the Pennsylvania Election Code, 25 P.S. § 3031.7(7).

Test Case Identifier: 17 – 1107-A(17), 25 P.S. § 3031.7(17) Public Counter, No Reopening of Polls, Media Security with Tamper Proof Locks and Zero Proof and Tally Reports

This test case was designed to test for compliance with 25 P.S. § 3031.7(17), which requires that, if the voting system is of a type which provides for the computation and tabulation of all votes at a central counting center or if it provides for the tabulation of district totals at such a central counting center, that the voting system (a) precludes tampering with the tabulation element during the course of operation, (b) does not allow for an over-vote, and (c) has a means by which to verify zero proof and results reports.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case the DS850 Central Tabulator provided a public counter that incremented with each cast vote; provided the ability to be locked after the polls were closed; precluded the re-opening of the polls after the polls were closed; provided design features that allow tamper evident locks and seals to be placed on the device (*see* photographs in Section 1.3); and provided zero proof and results reports. Additionally, upon opening of the polls, a zero proof report was printed that verified that all votes had been cleared from memory. The actual results obtained during execution met the expected results. *See* page 97 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded the DS850 Central Tabulator meets the requirements of Section 1107-A(17) of the Pennsylvania Election Code, 25 P.S. § 3031.7(17).

Test Case Identifier: Central Count Processing

This test was designed to ensure a central count scanner to properly process a larger amount of ballots. The central counter scanner must have multi-feed protection, out stacking ability for ballots it is unable to process, and the ability to segregate ballots that require human intervention. The ballots used in this test case included ballots marked by the AutoMark and the ExpressVote.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The actual results obtained during execution met the expected results. *See* page 99 of Attachment B. All ballots were processed, recorded, stored, and reported as documented in the described test deck. Therefore, the Examiner concludes that the DS850 Central Tabulator supports the requirements set forth in section 1107-A of the Pennsylvania Election Code, 25 P.S. § 3031.7.

4.3 DS200 Precinct Tabulator

Test Case Identifier: 02 – 1107-A(2), 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)

This test case was designed to test for compliance with 25 P.S. § 3031.7(2), which requires that a voting system “provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.” This test case ensures a vote for a candidate for “1 of 1,” “N of M,” and “Question” contests could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The DS200 Precinct Tabulator successfully recorded and reported votes for “1 of 1,” “N of M,” and “Question” contests for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 107 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes that the DS200 Precinct Tabulator meets the requirements of Section 1107-A(2) of the Pennsylvania Election Code, 25 P.S. § 3031.7(2).

Test Case Identifier: 03 – 1107-A(3), 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method

This test case was designed to test for compliance with 25 P.S. § 3031.7(3), which requires that a voting system allow a voter to perform straight-party voting according to the “Pennsylvania Method.” This test case was designed to ensure that a straight-party selection and the Pennsylvania Method of straight-party voting could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the DS200 Precinct Tabulator successfully recorded and reported straight-party votes and demonstrated the Pennsylvania Method of straight-party voting for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 109 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes that the DS200 Precinct Tabulator meets the requirements of Section 1107-A(3) of the Pennsylvania Election Code, 25 P.S. § 3031.7(3).

Test Case Identifier: 04 – 1107-A(4), 25 P.S. § 3031.7(4) Straight Party and Write-In

This test case was designed to test for compliance with 25 P.S. § 3031.7(4), which requires that a voting system permit a voter to vote for a candidate of his or her choice through a straight-party or write-in voting. This test case ensures that both a straight-party and write-in selection could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the DS200 Precinct Tabulator successfully recorded and reported straight-party and write-in votes for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 112 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded

the DS200 Precinct Tabulator meets the requirements of Section 1107-A(4) of the Pennsylvania Election Code, 25 P.S. § 3031.7(4).

Test Case Identifier: 05 – 1107-A(5), 25 P.S. § 3031.7(5) Selection of Candidate and Write-in

This test case was designed to test for compliance with 25 P.S. § 3031.7(5), which requires that a voting system permit a voter to vote for any candidate or write-in a candidate. This test case ensures that a candidate and write-in selection could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case the DS200 Precinct Tabulator successfully recorded and reported candidate selections and write-in votes for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. See page 115 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded the DS200 Precinct Tabulator meets the requirements of Section 1107-A(5) of the Pennsylvania Election Code, 25 P.S. § 3031.7(5).

Test Case Identifier: 07 – 1107-A(7), 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)

This test case was designed to test for compliance with 25 P.S. § 3031.7(7), which requires that a voting system prevent a voter from over voting. This test case ensures that a voter could not over vote for a contest or question during a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The DS200 Precinct Tabulator successfully prohibited a voter from selecting more than the number of allowable selections, including write-in votes, for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. See page 117 of Attachment B. The objective criteria for evaluation were analyzed and the system met the criteria. Therefore, the Examiner concluded the DS200 Precinct Tabulator meets the requirements of Section 1107-A(7) of the Pennsylvania Election Code, 25 P.S. § 3031.7(7).

Test Case Identifier: 10 – 1107-A(10), 25 P.S. § 3031.7(10) Ballot Review and Change

This test case was designed to test for compliance with 25 P.S. § 3031.7(10), which requires that a voting system allow for ballot review and change before casting the ballot. This test case ensures that a voter can review a voted ballot and make changes before casting the ballot and have a cast ballot input during a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the DS200 Precinct Tabulator provided a voter with a review screen when errors such as overvotes and undervotes were present. The voter is presented a list of contests on screen that the tabulator detected as not meeting criteria. The voter can either accepted the ballot as marked with errors or fill out another ballot with corrections. The actual results obtained during execution met the expected results. See page 120 of Attachment B. The objective criteria for evaluation were analyzed, and

the system met the criteria. Therefore, the Examiner concluded the DS200 Precinct Tabulator meets the requirements of Section 1107-A(10) of the Pennsylvania Election Code, 25 P.S. § 3031.7(10).

Test Case Identifier: 16 – 1107-A(16), 25 P.S. § 3031.7(16) Public Counter, No Reopening of Polls, Media Security with Tamper Proof Locks and Zero Proof and Tally Reports

This test case was designed to test for compliance with 25 P.S. § 3031.7(16), which requires that, if the voting system is of a type which provides for the computation and tabulation of votes at the district level, the voting system have a public counter, have the ability to lock after the polls are closed, provide for voter secrecy, prohibit over votes, and print zero proof and results reports. This test case verifies the display of a public counter. It also ensures that the device provides (a) a lock to prevent tabulation after the polls are closed and to prevent re-opening of the polls, (b) tamper evident locks and seals, and (c) zero proof and results reports.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case the DS200 Precinct Tabulator provided a public counter that incremented with each cast vote; provided the ability to be locked after the polls were closed; precluded the re-opening of the polls after the polls were closed; provided design features that allow tamper evident locks and seals to be placed on the device (*see* photographs in Section 1.3); and provided zero proof and results reports. The actual results obtained during execution met the expected results. *See* page 123 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes the DS200 Precinct Tabulator meets the requirements of Section 1107-A(16) of the Pennsylvania Election Code, 25 P.S. § 3031.7(16).

4.4 ES&S AutoMARK

****All ballots for the following test cases were run through both the DS200 and the DS850.****

Test Case Identifier: 01 – 1107-A(1), 25 P.S. § 3031.7(1) Voter Secrecy (ADA Voter)

This test case was designed to test for compliance with 25 P.S. § 3031.7(1), which requires that a voting system “provides for voting in absolute secrecy and prevents any person from seeing or knowing for whom any voter, except one who has received or is receiving assistance as prescribed by law, has voted or is voting.” This test case required observation of voter input from a distance that is considered public space for a voting system component in the standard voting position. Three different observation positions were used to observe what, if any, voter inputs could be seen.

Summary Finding: During the execution of this test case, the observer did report being able to see parts of the ballot and voter inputs. The observer could not see the actual selections. Any jurisdiction using the ES&S AutoMARK should follow Directive 4 of “Directive Concerning the Use, Implementation and Operation of Electronic Voting Systems by the County Board of Elections,” dated April 28, 2009, and issued by the Secretary of the Commonwealth. In the Examiner’s opinion, the ES&S AutoMARK, if setup per Directive 4, can provide for secrecy so that no person can see whom any voter has voted for, thus meeting the requirement of Section 1107-A(1) Pennsylvania Election Code, 25 P.S. § 3031.7(1). *See* page 127 of Attachment B.

Test Case Identifier: 02 – 1107-A(2), 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)

This test case was designed to test for compliance with 25 P.S. § 3031.7(2), which requires that a voting system “provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.” This test case ensures a vote for a candidate for “1 of 1,” “N of M,” and “Question” contests could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The ES&S AutoMARK successfully recorded and reported votes for “1 of 1,” “N of M,” and “Question” contests for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 130 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes that the ES&S AutoMARK meets the requirements of 1107-A(2) of the Pennsylvania Election Code, 25 P.S. § 3031.7(2).

Test Case Identifier: 03 – 1107-A(3), 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method

This test case was designed to test for compliance with 25 P.S. § 3031.7(3), which requires that a voting system allow a voter to perform straight-party voting according to the “Pennsylvania Method.” This test case was designed to ensure that a straight-party selection and the Pennsylvania Method of straight-party voting could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the ES&S AutoMARK successfully recorded and reported straight-party votes and demonstrated the Pennsylvania Method of straight-party voting for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 132 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes that the ES&S AutoMARK meets the requirements of Section 1107-A(3) of the Pennsylvania Election Code, 25 P.S. § 3031.7(3).

Test Case Identifier: 04 – 1107-A(4), 25 P.S. § 3031.7(4) Straight Party and Write-In

This test case was designed to test for compliance with 25 P.S. § 3031.7(4), which requires that a voting system permit a voter to vote for a candidate of his or her choice through a straight-party or write-in voting. This test case ensures that both a straight-party and write-in selection could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the ES&S AutoMARK successfully recorded and reported straight-party and write-in votes for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 137 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded the ES&S AutoMARK meets the requirements of Section 1107-A(4) of the Pennsylvania Election Code, 25 P.S. § 3031.7(4).

Test Case Identifier: 05 – 1107-A(5), 25 P.S. § 3031.7(5) Selection of Candidate and Write-in

This test case was designed to test for compliance with 25 P.S. § 3031.7(5), which requires that a voting system permit a voter to vote for any candidate or write-in a candidate. This test case ensures that a candidate and write-in selection could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case the ES&S AutoMARK successfully recorded and reported candidate selections and write-in votes for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 141 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded the ES&S AutoMARK meets the requirements of Section 1107-A(5) of the Pennsylvania Election Code, 25 P.S. § 3031.7(5).

Test Case Identifier: 07 – 1107-A(7), 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)

This test case was designed to test for compliance with 25 P.S. § 3031.7(7), which requires that a voting system prevent a voter from over voting. This test case ensures that a voter could not over vote for a contest or question during a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The ES&S AutoMARK successfully prohibited a voter from selecting more than the number of allowable selections, including write-in votes, for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 144 of Attachment B. The objective criteria for evaluation were analyzed and the system met the criteria. Therefore, the Examiner concluded the ES&S AutoMARK meets the requirements of Section 1107-A(7) of the Pennsylvania Election Code, 25 P.S. § 3031.7(7).

Test Case Identifier: 10 – 1107-A(10), 25 P.S. § 3031.7(10) Ballot Review and Change (Regular/ADA)

This test case was designed to test for compliance with 25 P.S. § 3031.7(10), which requires that a voting system allow for ballot review and change before casting the ballot. This test case ensures that a voter can review a voted ballot and make changes before casting the ballot and have a cast ballot input during a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the ES&S AutoMARK provided a voter with a review screen and allowed for the voter to return to either the beginning of the ballot or an individual contest to make changes to his or her selections before casting the ballot for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results *See* page 147 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded the ES&S AutoMARK meets the requirements of Section 1107-A(10) of the Pennsylvania Election Code, 25 P.S. § 3031.7(10).

4.5 ExpressVote Universal Voting Systems

****All ballots for the following test cases were run through both the DS200 and the DS850.****

Test Case Identifier: 01 – 1107-A(1), 25 P.S. § 3031.7(1) Voter Secrecy (ADA Voter)

This test case was designed to test for compliance with 25 P.S. § 3031.7(1), which requires that a voting system “provides for voting in absolute secrecy and prevents any person from seeing or knowing for whom any voter, except one who has received or is receiving assistance as prescribed by law, has voted or is voting.” This test case required observation of voter input from a distance that is considered public space for a voting system component in the standard voting position. Three different observation positions were used to observe what, if any, voter inputs could be seen.

Summary Finding: During the execution of this test case, the observer did report being able to see parts of the ballot and voter inputs. The observer could not see the actual selections. Any jurisdiction using the ExpressVote Universal Voting System should follow Directive 4 of “Directive Concerning the Use, Implementation and Operation of Electronic Voting Systems by the County Board of Elections,” dated April 28, 2009, and issued by the Secretary of the Commonwealth. In the Examiner’s opinion, the ExpressVote Universal Voting System, if setup per Directive 4, can provide for secrecy so that no person can see whom any voter has voted for, thus meeting the requirement of Section 1107-A(1) Pennsylvania Election Code, 25 P.S. § 3031.7(1). *See* page 150 of Attachment B.

Test Case Identifier: 02 – 1107-A(2), 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)

This test case was designed to test for compliance with 25 P.S. § 3031.7(2), which requires that a voting system “provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.” This test case ensures a vote for a candidate for “1 of 1,” “N of M,” and “Question” contests could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The ExpressVote Universal Voting System successfully recorded and reported votes for “1 of 1,” “N of M,” and “Question” contests for both a standard voting session and an ADA voting session. The examiner did not experience any difficulties navigating the user interface, but the ExpressVote only displays up to nine candidates per page. There may be difficulties using the “More” buttons to navigate up and down the candidate list versus the “Next” and “Previous” buttons used to navigate between contests. The Examiner experienced no difficulties navigating the audio cues to vote this test case. The actual results obtained during execution met the expected results. *See* page 153 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes that the ExpressVote Universal Voting System meets the requirements of Section 1107-A(2) of the Pennsylvania Election Code, 25 P.S. § 3031.7(2).

Test Case Identifier: 03 – 1107-A(3), 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method

This test case was designed to test for compliance with 25 P.S. § 3031.7(3), which requires that a voting system allow a voter to perform straight-party voting according to the “Pennsylvania Method.” This test

case was designed to ensure that a straight-party selection and the Pennsylvania Method of straight-party voting could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the ExpressVote Universal Voting System successfully recorded and reported straight-party votes and demonstrated the Pennsylvania Method of straight-party voting for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 155 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes that the ExpressVote Universal Voting System meets the requirements of Section 1107-A(3) of the Pennsylvania Election Code, 25 P.S. § 3031.7(3).

Test Case Identifier: 04 – 1107-A(4), 25 P.S. § 3031.7(4) Straight Party and Write-In

This test case was designed to test for compliance with 25 P.S. § 3031.7(4), which requires that a voting system permit a voter to vote for a candidate of his or her choice through a straight-party or write-in voting. This test case ensures that both a straight-party and write-in selection could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the ExpressVote Universal Voting System successfully recorded and reported straight-party and write-in votes for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 160 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded the ExpressVote Universal Voting System meets the requirements of Section 1107-A(4) of the Pennsylvania Election Code, 25 P.S. § 3031.7(4).

Test Case Identifier: 05 – 1107-A(5), 25 P.S. § 3031.7(5) Selection of Candidate and Write-in

This test case was designed to test for compliance with 25 P.S. § 3031.7(5), which requires that a voting system permit a voter to vote for any candidate or write-in a candidate. This test case ensures that a candidate and write-in selection could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case the ExpressVote Universal Voting System successfully recorded and reported candidate selections and write-in votes for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 164 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded the ExpressVote Universal Voting System meets the requirements of Section 1107-A(5) of the Pennsylvania Election Code, 25 P.S. § 3031.7(5).

Test Case Identifier: 07 – 1107-A(7), 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)

This test case was designed to test for compliance with 25 P.S. § 3031.7(7), which requires that a voting system prevent a voter from over voting. This test case ensures that a voter could not over vote for a contest or question during a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The ExpressVote Universal Voting System successfully prohibited a voter from selecting more than the number of allowable selections, including write-in votes, for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 167 of Attachment B. The objective criteria for evaluation were analyzed and the system met the criteria. Therefore, the Examiner concluded the ExpressVote Universal Voting System meets the requirements of Section 1107-A(7) of the Pennsylvania Election Code, 25 P.S. § 3031.7(7).

Test Case Identifier: 10 – 1107-A(10), 25 P.S. § 3031.7(10) Ballot Review and Change (Regular/ADA)

This test case was designed to test for compliance with 25 P.S. § 3031.7(10), which requires that a voting system allow for ballot review and change before casting the ballot. This test case ensures that a voter can review a voted ballot and make changes before casting the ballot and have a cast ballot input during a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the ExpressVote Universal Voting System provided a voter with a review screen and allowed for the voter to return to either the beginning of the ballot or an individual contest to make changes to his or her selections before casting the ballot for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 170 of Attachment B. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concluded the ExpressVote Universal Voting System meets the requirements of Section 1107-A(10) of the Pennsylvania Election Code, 25 P.S. § 3031.7(10).

4.6 SYSTEM INTEGRATION TESTING

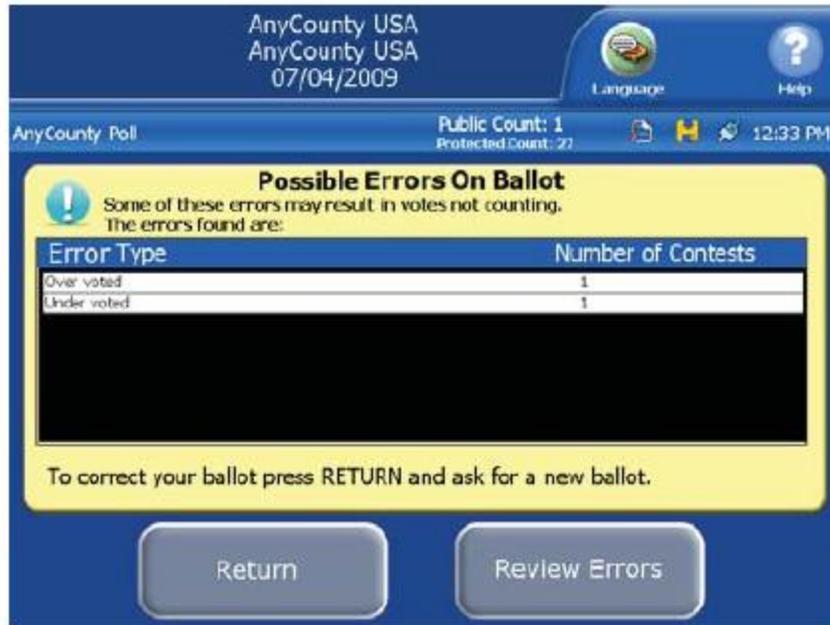
System Integration Testing was performed to test proprietary hardware, software and peripherals, as well as COTS materials configured as a complete system, including the EMS, ElectionWare, DS200, AutoMark, ExpressVote and the DS850. This test meets many of the requirements of the Pennsylvania Election Code that were previously verified in the Targeted Functionality area of testing, but was designed to specifically test the following sections and requirements:

- 25 P.S. § 3031.1, defining "electronic voting system" to be a "system in which one or more voting devices are used to permit the registering or recording of votes and in which such votes are computed and tabulated by automatic tabulating equipment. The system shall provide for a permanent physical record of each vote cast;"
- 25 P.S. § 3031.7(4), requiring that an electronic voting system "permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot;"

- 25 P.S. § 3031.7(6), requiring that an electronic voting system “permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote and precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote;”
- 25 P.S. § 3031.7(8), requiring that an electronic voting system “precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or upon any question, except in districts and for offices where cumulative voting is authorized by law;”
- 25 P.S. § 3031.7(9), requiring that an electronic voting system “permits each voter at a primary election to vote only for the candidates seeking nomination by a political party in which such voter is registered and enrolled, and for any candidate for nonpartisan nomination, and for any question upon which he is entitled to vote;” and
- 25 P.S. § 3031.17, requiring that the “county board of elections, as part of the computation and canvass of returns, shall conduct a statistical recount of a random sample of ballots after each election using manual, mechanical or electronic devices of a type different than those used for the specific election. The sample shall include at least two (2) per centum of the votes cast or two thousand (2,000) votes whichever is the lesser.”

Two election definitions, a general and closed primary election, were devised to test and measure specific input devices, voting patterns and results. Pre-voting reports were generated, consisting of a ballot proof report, precinct summary report, and election summary report. The polls were opened, and precinct tabulator zero proof reports were generated. The Examiner and Department of State staff members attempted to input a complex voting pattern consisting of distinct combinations of vote selection as documented in the Test Protocol (*See Appendix A Election Definitions*). The polls were closed, and results reports were generated including cast vote records and ballot images. The voted data was then transferred to the election management system (EMS), and election summary reports, precinct summary reports, and ballot images were printed. At the conclusion of the test, the Examiner conducted a statistical recount of at least 10% of the votes cast using the ballots. The procedure for conducting the statistical recount was to use the documented voting pattern and compare it to the ballots. The procedure identified each ballot by the distinct voting pattern that was input. The Examiner also generated a backup of the EMS database and retained a copy with the other test data.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The EVS 5.2.0.0 Voting System successfully completed both the general and closed primary election. The closed primary included a contest that was a vote for three with thirteen candidates and a vote for four with twelve candidates. The actual results obtained during execution met the expected results. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, the Examiner concludes the EVS 5.2.0.0 Voting System meets the requirements of Sections 3031.1 and 3031.17 of the Pennsylvania Election Code because the system generate a permanent physical records in the form of paper ballots that were used to conduct a statistical recount. The EVS 5.2.0.0 Voting System also complies with Sections 3031.7(4) and (9) because test voters in the primary election were only able to vote for their party and the system rejected attempts to vote for non-party candidates. The EVS 5.2.0.0 Voting System meets the requirements for Sections 3031.7(6) and (8) in that the test voters cast votes on different ballot styles for candidates and questions and the EVS 5.2.0.0 Voting System precluded test voters from over voting by setting the tabulation devices to reject overvoted ballots. Please see the image below:



4.7 PENETRATION ANALYSIS

A penetration analysis was performed to verify compliance with 25 P.S. § 3031.7(12), which requires that a voting device “provides acceptable ballot security procedures and impoundment of ballots to prevent tampering with or substitution of any ballots or ballot cards.”

The precinct tabulation devices and ballot marking devices were configured for delivery to a polling place from a warehouse; this included all seals and locks recommended by the manufacturer. The central count was configured as set for operation in a county office. The Examiner inspected the device for the ability to tamper with the transportation case and the device inside the case. The inspection examined the ports, the outer case, and memory devices from the aspect of the device as delivered to the polling place and configured for voting. The Examiner also examined both the precinct device and the EMS for password management of administrative functions and ensured the system counter cannot be reset by unauthorized persons.

The Examiner did not test the software for security, but did review test data from NTS that included EVS 5.0.0.0 Security Matrix, Threat Matrix, Test logs, photographs, Security Test Planning Matrix and Security scans. Although the Examiner did not receive the actual test cases, the data provided appears to be an adequate Penetration Test. A summary of this testing can be found in Appendix 4 of the Wyle 5.0.0.0 Report.

5.0 CERTIFICATION FOR USE

The EVS 5.2.0.0 Voting System, as presented for examination, meets the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22. Two optional features of the EVS 5.2.0.0 were also presented: the ExpressPass printer that functions with the certified ExpressPoll 5000 with EZRoster 2.7.12.4 was presented as a “Ballot on Demand” printer, and the ability of the ExpressVote to retrieve a marked ballot from a Quick Response (QR) code was evaluated. The ExpressPass printer was examined to produce an assigned ballot for the ExpressVote tested. This optional feature should be included as part of the EVS 5.2.0.0 system. The other feature is the optional scanner attached to the ExpressVote to retrieve QR codes. At this time, the Examiner feels this feature cannot be approved for use in the Commonwealth of Pennsylvania. The QR codes are not a “one off” code and can be reproduced to retrieve the same marked ballot. This could introduce the possibility of mass producing marked ballots for distribution. The ExpressVote should not have the optional QR code scanner attached to the ExpressVote so that this feature is not enabled. The EVS 5.2.0.3 Voting System submitted after the examination has been reviewed and examined to determine to what degree the changes implemented in the new version differ from the EVS 5.2.0.0 presented for examination. The Examiner has determined the changes would not affect the outcome of this examination. As the Examiner, I recommend the voting system documented in Section 2.0 of this report, with the above mentioned feature, be certified for use in the Commonwealth of Pennsylvania. As the Examiner, I also recommend the EVS 5.2.0.3 Voting System, with the above mentioned feature, be certified for use in the Commonwealth of Pennsylvania.

ATTACHMENT A
ELECTION DEFINITIONS

Election Definition: Pennsylvania Certification Closed Primary Election

Primary Election Description:

A closed primary election for 2 parties in 3 precincts. This election contains 35 contests compiled into 6 ballot styles. Each ballot style contains 15 contests. The voting variations supported in a primary election by the Commonwealth of Pennsylvania are defined in this election. The voting variations are as follows:

- Partisan contest
- Non-Partisan
- Primary Presidential delegation nominations
- Write-In voting
- N of M Contest
- Cross-Party Filed Candidates

This closed primary election was designed to functionally test the handling of multiple ballot styles across geographical subdivisions, support for two languages, and support for common primary specific voting variations.

Configuration:

EMS computer loaded with software certified for use in Pennsylvania to create the following configuration:

Name: Pennsylvania Certification Closed Primary Election

Voting Devices: 1 machine for each precinct

Precincts: Precinct 1, Precinct 2, Precinct 3

Parties: Republican, Democrat

Languages: English, Spanish

Totals Contests: 35

Contests as follows:

Precinct 1 REP	Precinct 2 REP	Precinct 3 REP	Precinct 1 DEM	Precinct 2 DEM	Precinct 3 DEM
President of the United States Vote for One James Collins Alexander P. Bicket Carol Koethen Write-In			President of the United States Vote for One Barry Josey Calvin Marino Write-In		
United States Senator Vote for One Bob Ford <i>Allegheny County</i> Colby Lincoln <i>Delaware County</i> Write-In			United States Senator Vote for One Oscar Draper <i>Cumberland County</i> Carter McGaw <i>Philadelphia County</i> Write-In		
Representative in Congress 5 th District Vote for One		Representative in Congress 10 th District	Representative in Congress 5 th District Vote for One		Representative in Congress

<p>Ben Baker <i>Allegheny County</i></p> <p>Write-In</p>	<p>Vote for One</p> <p>Cheryl Simon <i>York County</i></p> <p>Lois Koss <i>Erie County</i></p> <p>Write-In</p>	<p>Barbara Barret Hicks <i>Montgomery County</i></p> <p>Clinton Testo <i>Centre County</i></p> <p>Write-In</p>	<p>10th District Vote for One</p> <p>William Sullivan</p> <p><i>Butler County</i></p> <p>Write-In</p>
<p>Governor Vote for One</p> <p>Dean Lindsey <i>Allegheny County</i></p> <p>Don Etter <i>Allegheny County</i></p> <p>Joe Carlton <i>Washington County</i></p> <p>Edwin Lewis <i>Lancaster County</i></p> <p>Samuel Lawton <i>Bucks County</i></p> <p>Write-In</p>		<p>Governor Vote for One</p> <p>Charles Jasen <i>Montgomery County</i></p> <p>Shirley Henning <i>Luzerne County</i></p> <p>Write-In</p>	
<p>Lieutenant Governor Vote for One</p> <p>Scott Montes <i>Berks County</i></p> <p>Saul Currier <i>Lehigh County</i></p> <p>Arnold Krill <i>Lycoming County</i></p> <p>Write-In</p>		<p>Lieutenant Governor Vote for One</p> <p>Sherman R. Bucher <i>Philadelphia County</i></p> <p>Richard V. Suits <i>Cambria County</i></p> <p>Tabathia Song <i>Allegheny County</i></p> <p>Kenneth Interlicchio <i>Philadelphia County</i></p> <p>Write-In</p>	
<p>Representative in the General Assembly 83rd District Vote for One</p> <p>Harry Rider <i>Cascade</i></p> <p>Robert Tyrell <i>McNett</i></p> <p>Write-In</p>	<p>Representative in the General Assembly 84th District Vote for One</p> <p>Peter Valle <i>Muncy</i></p> <p>Write-In</p>	<p>Representative in the General Assembly 83rd District Vote for One</p> <p>R. J. Abbott <i>Shrewsbury</i></p> <p>Peter F. Saxton <i>Willamspport</i></p> <p>Write-In</p>	<p>Representative in the General Assembly 84th District Vote for One</p> <p>Neil Carey <i>Lewis</i></p> <p>Saul Currier <i>Eldred</i></p> <p>Write-In</p>
<p>Delegate to the National Convention –5th District Vote for Not More Than Three</p>		<p>Delegate to the National Convention –5th District Electing 2 Males and 2 Females</p>	

<p>Gloria Dillion Heather Heidelbaugh Herbert Devine George A. Fisk Doris Shiddles Andre Ninia Brian Getz Chad Snow Diane Rubin Elizabeth Piazza</p> <p>Write-In Write-In Write-In</p>	<p style="text-align: center;">Vote Not More Than Four</p> <p>Vincent Seymour <i>(M) Committed to Barry Josey</i></p> <p>Toni Hamilton <i>(F) Committed to Calvin Marino</i></p> <p>Sam Patel <i>(M) Committed to Barry Josey</i></p> <p>Robert Rocco <i>(M) Committed to Calvin Marino</i></p> <p>Renee Cohn Jubelrier <i>(F) Committed to Calvin Marino</i></p> <p>Morton Steele <i>(M) Committed to Calvin Marino</i></p> <p>Mary Burke <i>(F) Committed to Barry Josey</i></p> <p>Nyda E. Hambin <i>(F) Committed to Barry Josey</i></p> <p>Write-In Write-In Write-In Write-In</p>
<p style="text-align: center;">Judge of the Superior Court Vote for One</p> <p>Richard Maxian <i>Philadelphia County</i></p> <p>Marjorie Hall <i>Delaware County</i></p> <p>Robert L. Linkey <i>Bucks County</i></p> <p>Write-In</p>	<p style="text-align: center;">Judge of the Superior Court Vote for One</p> <p>Linda Gapp <i>Cumberland County</i></p> <p>Patricia Smallmon <i>Allegheny County</i></p> <p>Write-In</p>
<p style="text-align: center;">Judge of the Commonwealth Court Vote for One</p> <p>Chris Carpenter <i>Montgomery County</i></p> <p>Write-In</p>	<p style="text-align: center;">Judge of the Commonwealth Court Vote for One</p> <p>Eugene Ruff <i>Washington County</i></p> <p>Lewis Tese <i>Luzerne County</i></p> <p>Write-In</p>
<p style="text-align: center;">Judge of the Court of Common Pleas Vote for Not More Than Two</p> <p>Mary L. Daniel <i>Armstrong</i></p> <p>John Roy <i>Clinton</i></p> <p>Jack "Duke" Brodisky <i>McNett</i></p> <p>Jon Young</p>	<p style="text-align: center;">Judge of the Court of Common Pleas Vote for Not More Than Two</p> <p>Joanne Shollzert <i>Williamsport</i></p> <p>Kerry Jones <i>Williamsport</i></p> <p>Steven Miller <i>Lewis</i></p> <p>Shirley Henning</p>

<p><i>Muncy</i></p> <p>Vic Stabile <i>Gamble</i></p> <p>Write-In</p> <p>Write-In</p>			<p><i>Mill Creek</i></p> <p>Write-In</p> <p>Write-In</p>		
<p>County Chief Executive Four Year Term Vote for One</p> <p>Norman Powers <i>Williamsport</i></p> <p>Sandra Reilly <i>McNett</i></p> <p>Write-In</p>			<p>County Chief Executive Four Year Term Vote for One</p> <p>Micheal Santarcangelo <i>Fairfield</i></p> <p>Charles Place <i>Gamble</i></p> <p>Write-In</p>		
<p>School Director Region 6 Four Year Term Vote for Not More Than Two</p> <p>Gerald Danson</p> <p>Greg Ortiz</p> <p>Shlomo Archibald</p> <p>Delores DeVan</p> <p>Write-In</p> <p>Write-In</p>			<p>School Director Region 6 Four Year Term Vote for Not More Than Two</p> <p>Douglas Stone</p> <p>Gerald Danson</p> <p>Greg Ortiz</p> <p>Shlomo Archibald</p> <p>Delores DeVan</p> <p>Write-In</p> <p>Write-In</p>		
<p>Commissioner Seat 1 Four Year Term Vote for One</p> <p>Stephen Harrick</p> <p>Write-In</p>	<p>Commissioner Seat 2 Four Year Term Vote for One</p> <p>Steve West</p> <p>Write-In</p>	<p>Commissioner Seat 3 Four Year Term Vote for One</p> <p>William Malicki</p> <p>Gary Klemann</p> <p>Write-In</p>	<p>Commissioner Seat 1 Four Year Term Vote for One</p> <p>George Fisk</p> <p>Write-In</p>	<p>Commissioner Seat 2 Four Year Term Vote for One</p> <p>Tetty Rogiers</p> <p>Write-In</p>	<p>Commissioner Seat 3 Four Year Term Vote for One</p> <p>Arnold Wells</p> <p>Write-In</p>
<p align="center">Referendum A Bond Issue</p> <p>To promote and assure the preservation and improvement of essential rail passenger and freight services to the inhabitants of the state, shall section two of chapter one hundred eighteen of the laws of nineteen hundred seventy-four, authorizing the creation of a state debt in the amount of two hundred fifty million dollars for capital facilities be approved?</p> <p>Yes</p> <p>No</p>					

Spanish

Distrito electoral 1 REP	Distrito electoral 2 REP	Distrito electoral 3 REP	Distrito electoral 1 DEM	Distrito electoral 2 DEM	Distrito electoral 3 DEM
<p align="center">Presidente de los Estados Unidos Vote por uno</p> <p>James Collins Alexander P. Bicket Carol Koethen Por escrito</p>			<p align="center">Presidente de los Estados Unidos Vote por uno</p> <p>Barry Josey Calvin Marino Por escrito</p>		
<p align="center">Senador de los Estados Unidos Vote por uno</p> <p>Bob Ford <i>Condado de Allegheny</i> Colby Lincoln <i>Condado de Delaware</i> Por escrito</p>			<p align="center">Senador de los Estados Unidos Vote por uno</p> <p>Oscar Draper <i>Condado de Cumberland</i> Carter McGaw <i>Condado de Filadelfia</i> Por escrito</p>		
<p align="center">Representante en el Congreso 5° Distrito Vote por uno</p> <p>Ben Baker <i>Condado de Allegheny</i> Por escrito</p>		<p align="center">Representante en el Congreso 10.º Distrito Vote por uno</p> <p>Cheryl Simon <i>Condado de York</i> Lois Koss <i>Condado de Erie</i> Por escrito</p>	<p align="center">Representante en el Congreso 5° Distrito Vote por uno</p> <p>Barbara Barret Hicks <i>Condado de Montgomery</i> Clinton Testo <i>Condado Centre</i> Por escrito</p>		<p align="center">Representant e en el Congreso 10.º Distrito Vote por uno</p> <p>William Sullivan <i>Condado de Butler</i> Por escrito</p>
<p align="center">Gobernador Vote por uno</p> <p>Dean Lindsey <i>Condado de Allegheny</i> Don Etter <i>Condado de Allegheny</i> Joe Carlton <i>Condado de Washington</i> Edwin Lewis <i>Condado de Lancaster</i> Samuel Lawton <i>Condado de Bucks.</i> Por escrito</p>			<p align="center">Gobernador Vote por uno</p> <p>Charles Jasen <i>Condado de Montgomery</i> Shirley Henning <i>Condado de Luzerne</i> Por escrito</p>		
<p align="center">Vicgobergador Vote por uno</p> <p>Scott Montes <i>Condado de Berks</i> Saul Currier</p>			<p align="center">Vicgobergador Vote por uno</p> <p>Sherman R. Bucher <i>Condado de Filadelfia</i> Richard V. Suits</p>		

<p><i>Condado de Lehigh</i></p> <p>Arnold Krill <i>Condado de Lycoming</i></p> <p>Por escrito</p>		<p><i>Condado de Cambria</i></p> <p>Tabathia Song <i>Condado de Allegheny</i></p> <p>Kenneth Interlicchio <i>Condado de Filadelfia</i></p> <p>Por escrito</p>	
<p>Representante en la Asamblea General 83.º Distrito Vote por uno</p> <p>Harry Rider <i>Cascade</i></p> <p>Robert Tyrell <i>McNett</i></p> <p>Por escrito</p>	<p>Representante en la Asamblea General 84.º Distrito Vote por uno</p> <p>Peter Valle <i>Muncy</i></p> <p>Por escrito</p>	<p>Representante en la Asamblea General 83.º Distrito Vote por uno</p> <p>R. J. Abbott <i>Shrewsbury</i></p> <p>Peter F. Saxton <i>Willamsport</i></p> <p>Por escrito</p>	<p>Representante en la Asamblea General 84.º Distrito Vote por uno</p> <p>Neil Carey <i>Lewis</i></p> <p>Saul Currier <i>Eldred</i></p> <p>Por escrito</p>
<p>Delegado a la convención nacional – 5.º Distrito No vote por no más de tres</p> <p>Gloria Dillion Heather Heidelbaugh Herbert Devine George A. Fisk Doris Shiddles Andre Ninia Brian Getz Chad Snow Diane Rubin Elizabeth Piazza</p> <p>Write-In Write-In Write-In</p>		<p>Delegado a la convención nacional – 5.º Distrito Elija 2 damas y 2 caballeros No vote por más de cuatro</p> <p>Vincent Seymour <i>(H) Committed to Barry Josey</i></p> <p>Toni Hamilton <i>(M) Committed to Calvin Marino</i></p> <p>Sam Patel <i>(H) Committed to Barry Josey</i></p> <p>Robert Rocco <i>(H) Committed to Calvin Marino</i></p> <p>Renee Cohn Jubelrier <i>(M) Committed to Calvin Marino</i></p> <p>Morton Steele <i>(H) Committed to Calvin Marino</i></p> <p>Mary Burke <i>(M) Committed to Barry Josey</i></p> <p>Nyda E. Hambin <i>(M) Committed to Barry Josey</i></p> <p>Write-In Write-In Write-In Write-In</p>	
<p>Juez de la corte suprema Vote por uno</p> <p>Richard Maxian <i>Condado de Filadelfia</i></p> <p>Marjorie Hall <i>Condado de Delaware</i></p> <p>Robert L. Linkey <i>Condado de Bucks.</i></p>		<p>Juez de la corte suprema Vote por uno</p> <p>Linda Gapp <i>Condado de Cumberland</i></p> <p>Patricia Smallmon <i>Condado de Allegheny</i></p> <p>Write-In</p>	

Write-In					
<p align="center">Juez de la corte del estado Vote por uno</p> <p>Chris Carpenter <i>Condado de Montgomery</i></p> <p>Write-In</p>			<p align="center">Juez de la corte del estado Vote por uno</p> <p>Eugene Ruff <i>Condado de Washington</i></p> <p>Lewis Tese <i>Condado de Luzerne</i></p> <p>Write-In</p>		
<p align="center">Juez de la corte de primeras instancias Vote por no más de dos</p> <p>Mary L. Daniel <i>Armstrong</i></p> <p>John Roy <i>Clinton</i></p> <p>Jack "Duke" Brodisky <i>McNett</i></p> <p>Jon Young <i>Muncy</i></p> <p>Vic Stabile <i>Gamble</i></p> <p>Por escrito</p> <p>Por escrito</p>			<p align="center">Juez de la corte de primeras instancias No vote por más de dos</p> <p>Joanne Shollzert <i>Williamsport</i></p> <p>Kerry Jones <i>Williamsport</i></p> <p>Steven Miller <i>Lewis</i></p> <p>Shirley Henning <i>Mill Creek</i></p> <p>Por escrito</p> <p>Por escrito</p>		
<p align="center">Jefe principal del condado Término de cuatro años Vote por uno</p> <p>Norman Powers <i>Williamsport</i></p> <p>Sandra Reilly <i>McNett</i></p> <p>Por escrito</p>			<p align="center">Jefe principal del condado Término de cuatro años Vote por uno</p> <p>Micheal Santarcangelo <i>Fairfield</i></p> <p>Charles Place <i>Gamble</i></p> <p>Por escrito</p>		
<p align="center">Director de la escuela Región 6 Término de cuatro años No vote por más de dos</p> <p>Gerald Danson</p> <p>Greg Ortiz</p> <p>Shlomo Archibald</p> <p>Delores DeVan</p> <p>Por escrito</p> <p>Por escrito</p>			<p align="center">Director de la escuela Región 6 Término de cuatro años No vote por más de dos</p> <p>Douglas Stone</p> <p>Gerald Danson</p> <p>Greg Ortiz</p> <p>Shlomo Archibald</p> <p>Delores DeVan</p> <p>Por escrito</p> <p>Por escrito</p>		
Comisionado	Comisionado	Comisionado	Comisionado	Comisionado	Comisionado

Puesto 1 Término de cuatro años Vote por uno	Puesto 2 Término de cuatro años Vote por uno	Puesto 3 Término de cuatro años Vote por uno	Puesto 1 Término de cuatro años Vote por uno	Puesto 2 Término de cuatro años Vote por uno	Puesto 3 Término de cuatro años Vote por uno
Stephen Harrick	Steve West	William Malicki	George Fisk	Tetty Rogiers	Arnold Wells
Por escrito	Por escrito	Gary Klemann Por escrito	Por escrito	Por escrito	Por escrito

Referéndum a nivel estatal

Asunto del bono

Para promover y asegurar la preservación y mejoramiento del pasajero férreo esencial y servicios de carga para los habitantes del estado, ¿se debe aprobar la sección dos del capítulo ciento dieciocho de las leyes de mil novecientos sesenticuatro, autorizando la creación de una deuda estatal en la cantidad de doscientos cincuenta millones de dólares para instalaciones de capital?

Sí

No

Voting Pattern:

Precinct 1 REP	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10	B 11	B 12	B 13	B 14	B 15	B 16	B 17	B 18	B 19
President of the United States																			
James Collins	X				X	X		X		X		X		X		U	X	X	
Alexander P. Bicket		X					X								X				X
Carol Koethen			X						X		X								
Write-In				X									X						
United States Senator																			
Bob Ford			X				X		X				X		X				X
Colby Lincoln	X	X		X	X			X		X	X	X		X		X		X	
Write-In						X											X		
Representative in Congress 5th District																			
Ben Baker	X	X	X	X	U		X	X	X	X		X	X	X		X	X		X
Write-In						X				X					X				X
Governor																			
Dean Lindsey				X			X				X		X			X			
Don Etter			X		X							X			X			X	
Joe Carlton	X					X			X	X				X				X	
Edwin Lewis		X																	X
Samuel Lawton								X											
Write-In																			
Lieutenant Governor																			
Scott Montes					X					X						X		U	X
Saul Currier				X					X					X					
Arnold Krill	X		X			X	X	X			X	X	X		X				
Write-In		X																X	
Representative in the General Assembly 83rd District																			
Harry Rider	X	X		X		X		X	X	X		X	X		X		X		X
Robert Tyrell			X				X			X		X		X		X			
Write-In					X														X
Presidential Nomination Delegation																			
Gloria Dillion	X	X		X		X		X	X	X	X		X		X	X		X	X
Heather Heidelbaugh		X			X					X		X			X	X			X
Herbert Devine		X	X	X			X	X	X	X		X	X	X	X	U			X
George A. Fisk	X				X								X						X
Doris Shiddles			X						X			X							
Andre Ninia								X						X					X

Brian Getz	X		X	X																
Chad Snow							X						X							
Diane Rubin							X													
Elizabeth Piazza				X																
Write-In						X												X		
Write-In						X												X		
Write-In																		X		
Judge of the Superior Court																				
Richard Maxian					X		X		U		X			X					X	
Marjorie Hall		X				X						X		X						X
Robert L. Linkey	X			X				X		X		X				X	X	X		
Write-In			X																	
Judge of the Commonwealth Court																				
Chris Carpenter	X	X	X	X	X	U	X	X	X	X	X	X	X	U	X	X	X	X	X	X
Write-In											X									
Judge of the Court of Common Pleas																				
Mary L. Daniel	X	X		X		X		X	X	X			X		X	X	U	X	X	
John Roy		X							U			X					U	X		
Jack "Duke" Brodsky	X		X	X	X		X		X	X			X	X		X			X	
Jon Young			X				U				X	X			X					X
Vic Stabile					X									X						X
Write-In						X						X								
Write-In																				
County Chief Executive																				
Norman Powers	X		X	X		X	X	X		X		X	X	U				X	X	X
Sandra Reilly		X			X					X		X			X	X				
Write-In																	X			
School Director Region 6																				
Gerald Danson	X		X	X		X		X		X			X	X	U	X		X	X	X
Greg Ortiz	X				X		X			X		X	X		U					
Shlomo Archibald		X	X	X	X		X	X	X	X	X		X			X		X	X	X
Delores DeVan		X				X			X			X		X				X		
Write-In																		X		
Write-In																		X		
Commissioner Seat 1																				
Stephen Harrick	U	X	X	X	X		X	X	X	X	X	X	X	U	X	X		X	X	X
Write-In						X											X			
Referendum A																				
Yes	U		X	X	X		X	X	X	X	X	X	X	U	X	U	X			X
No		X				X			X										X	X
Precinct 1 DEM																				
	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10	B 11	B 12	B 13	B 14	B 15	B 16	B 17	B 18	B 19	
President of the United States																				
Barry Josey	X	U				X					X		X				X		X	
Calvin Marino			X	X	X			X	X	X		X		X	X	X		X		
Write-In							X													
United States Senator																				
Oscar Draper	X		X	X	X	X		X		X	X		X		X	X		X		
Carter McGaw		X					X		X					X			X		X	
Write-In												X								
Representative in Congress 5th District																				
Barbara Barret Hicks	X	X	X		X		X		X		X	X		X	X	X		X		
Clinton Testo				X					X		X			X				X		X
Write-In						X														
Governor																				
Charles Jasen	X		X	X	X		X				X		X	X	X		X	X		
Shirley Henning		X				X		X	X			X				X				X
Write-In										X										
Lieutenant Governor																				
Sherman R. Bucher				X									X							
Richard V. Suits							X						X						X	

Tabathia Song	X								X					X	X	X			
Kenneth Interlicchio		X	X			X	X		X			X			X		X		X
Write-In									X										
Representative in the General Assembly 83rd District																			
R. J. Abbott	X	X		X		X		X		U		X	X	X		X		X	X
Peter F. Saxton			X		X			X		X					X		X		
Write-In							X												
Presidential Nomination Delegation																			
Vincent Seymour			U		X		X		X			X	X			X		U	X
Toni Hamilton	X	X	U	X	X	X	X	X		X		X	X	X		X		U	X
Sam Patel			U		X		X		X			X	X		X	X		U	X
Robert Rocco	X	X	U	X	U	X		X		X		X	X	X		X		U	X
Renee Cohn Jubelrier	X	X		X	U	X		X		X			X	X		X			
Morton Steele	X	U		X		X		X		X			X	X		X			
Mary Burke							X		X			X			X				X
Nyda E. Hambin							X					X			X				X
Write-In									X	X									
Write-In									X										
Write-In									X										
Write-In									X										
Judge of the Superior Court																			
Linda Gapp				X				X		X			U			X		X	X
Patricia Smallmon	X	X	X		X	X			X	X		X		X	X	X	X	X	X
Write-In							X												
Judge of the Commonwealth Court																			
Eugene Ruff			X	X		X	X	X	X		X		X	X		U		X	X
Lewis Tese	X	X			X					X		X			X		X		X
Write-In																			
Judge of the Court of Common Pleas																			
Joanne Shollzert	X		X	X	X	X		X		X		X		X	X		X	U	X
Kerry Jones	X	X		X	X		X	X	X		X	X		X	X		X	U	X
Steven Miller		X				X			X		U		X		X				X
Shirley Henning			X				X						X		X				X
Write-In										X									
Write-In										X									
County Chief Executive																			
Micheal Santarcangelo	X		X	X	X		X	X	X		X		X		X	X		X	X
Charles Place		X				X				X		X			X			X	X
Write-In																			
School Director Region 6																			
Douglas Stone		X		X					X		X		X		X		X	X	
Gerald Danson	X		X	X			X	X	X	X		X		X	X	X		X	X
Greg Ortiz		X			X					X				X		X		X	X
Shlomo Archibald	X		X		X	X	X			X		X		X	X			X	X
Delores DeVan						X		X				X							
Write-In																			
Write-In																			
Commissioner Seat 1																			
George Fisk	X	X	X	X	X	X	X	X	X	X	X	X	X	U	X	X	X	X	X
Write-In																			
Referendum A																			
Yes	X		X	X	X		X	U		U	X	X	X		X	X		X	X
No		X				X			X	X					X			X	
Precinct 2 REP																			
	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10	B 11	B 12	B 13	B 14	B 15	B 16	B 17	B 18	B 19
President of the United States																			
James Collins	X	X			X		X		X		X	X	X		X	X		X	U
Alexander P. Bicket			X			X								X					
Carol Koethen				X				X									X		
Write-In									X										

United States Senator																			
Bob Ford		X						X	X	X					X	X	X		X
Colby Lincoln	X		X		X	X	X		X			X	X	X	X		X		X
Write-In				X															
Representative in Congress 5 th District																			
Ben Baker	X	U	U		X		X	X	X	X	X	X	X	X	X	X	X	X	X
Write-In				X		X													
Governor																			
Dean Lindsey				X			X				X		X			X			
Don Etter			X		X							X			X		X		
Joe Carlton	X					X			X	X				X			X		X
Edwin Lewis		X																	X
Samuel Lawton								X											
Write-In																			
Lieutenant Governor																			
Scott Montes	X							X			X							X	
Saul Currier		X					X		X					X			X		
Arnold Krill			X	X	X				X				X		X	X			X
Write-In						X						X							X
Representative in the General Assembly 83 rd District																			
Harry Rider	X	X	X		X	X		X		X	X		X	X		X	X	X	
Robert Tyrell				X			X		X			X			X				X
Write-In																			X
Presidential Nomination Delegation																			
Gloria Dillion	X	X	X				X	X		X	U		X	X		X	X		X
Heather Heidelbaugh	X		X							X	U		X		X	X		X	X
Herbert Devine	X			X	X		X	U		X	U			X			X		X
George A. Fisk		X						U				X							X
Doris Shiddles		X			X												X		X
Andre Ninia			X									X						X	X
Brian Getz				X	X								X	X		X			
Chad Snow				X		X						X							
Diane Rubin						X			X						X				
Elizabeth Piazza						X	X							X				X	
Write-In									X										
Write-In									X										
Write-In																			
Judge of the Superior Court																			
Richard Maxian				X						X			X		X			X	
Marjorie Hall		X				X					X			X					X
Robert L. Linkey	X		X		X		X	X	X			X			X				X
Write-In																X			
Judge of the Commonwealth Court																			
Chris Carpenter	X	U	X	X	X	X	X	X	X	X	X	X	X	X	U	X	X	X	X
Write-In																			X
Judge of the Court of Common Pleas																			
Mary L. Daniel		X	X	X		X	X	X	X	X	X		X			X		X	X
John Roy	X	X							X	X				X				X	
Jack "Duke" Brodsky	X		X		X	X		X		X	X		X	X		X	X	X	X
Jon Young				X									X		X	X			
Vic Stabile					X		X					X			X				
Write-In																			
Write-In																			
County Chief Executive																			
Norman Powers	X				X	X		X	X		X		X	X	U		X		X
Sandra Reilly		X	X	X			X			X		X			X		X		X
Write-In																			
School Director Region 6																			
Gerald Danson	U	X		X	X			X	X	X		X		X	X	X		X	
Greg Ortiz	U	X	X			X		X	X			X	X		X	X			X
Shlomo Archibald			X	X	X					X	X	X		X	X	X	X	X	X
Delores DeVan						X					X		X						X
Write-In							X									X			
Write-In							U												

Commissioner Seat 2																			
Steve West	X		X	X	X	X	X	X	X	U	X	X		X	X	X	X	X	X
Write-In		X												X					X
Referendum A																			
Yes	U		X	X	X	X	X	X	X	U		X	X	X	X	X	X	X	X
No		X									X								X
Precinct 2 DEM	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10	B 11	B 12	B 13	B 14	B 15	B 16	B 17	B 18	B 19
President of the United States																			
Barry Josey	X	X		X		X		X		X	U		X		X		X		X
Calvin Marino			X		X		X					X				X		X	
Write-In									X					X					
United States Senator																			
Oscar Draper	X		X	X			X			X		X	X	X	U		X		
Carter McGaw		X			X			X		X		X				X		X	X
Write-In						X			X									X	X
Representative in Congress 5th District																			
Barbara Barret Hicks			X	X	X		X	X	X	X		X	X		X		X	X	X
Clinton Testo		X				X					X			X					
Write-In	X															X			
Governor																			
Charles Jasen	X	X	X		X	X			X		X	X	X	X		X		X	
Shirley Henning				X				X		X					X		X		X
Write-In							X												
Lieutenant Governor																			
Sherman R. Bucher		X						X						X		X		X	
Richard V. Suits										X									
Tabathia Song			X				X						X						
Kenneth Interlicchio	X			X	X	X			X			X			X		X		X
Write-In										X									
Representative in the General Assembly 83rd District																			
R. J. Abbott	X	X		X	X	X		X	X	X	U		X	X	X		X	X	X
Peter F. Saxton			X				X			X			X						
Write-In																X			
Presidential Nomination Delegation																			
Vincent Seymour		X		X		X		X			U			X		X		X	
Toni Hamilton	X		X		X	X	X		X	X	U	X	X		X		X		U
Sam Patel		X		X				X		X	U			X		X			U
Robert Rocco	X		X		X	X	X	U	X	X	U	X	X			X	X	U	X
Renee Cohn Jubelier	X		X		X		X	U	X	X					X		X		
Morton Steele	X		X		X		X		X							X	X		X
Mary Burke		X		X										X	X				
Nyda E. Hambin		X		X										X	X				
Write-In												X	X						
Write-In												X	X						
Write-In																			
Write-In																			
Judge of the Superior Court																			
Linda Gapp		X				X		X				X			X				X
Patricia Smallmon	X		X	X	X		X		X	X			X	X		X	X		
Write-In											X							X	
Judge of the Commonwealth Court																			
Eugene Ruff	X	X		X	X		X	X	X			X			X	U			X
Lewis Tese			X			X				X	X		X					X	X
Write-In														X					
Judge of the Court of Common Pleas																			
Joanne Shollzert	X	X	X		X	X		X	X	X		X	X	U	X		X		X
Kerry Jones	X	X		X	X	U	X		X				X	U		X	X	X	X
Steven Miller			X				X			X	X	X			X			X	
Shirley Henning				X				X		X						X			

Write-In																				
Write-In																				
County Chief Executive																				
Micheal Santarcangelo	X		X		X	X	X		X				X	X		X	X	X	U	X
Charles Place		X		X					X		X	X			X					X
Write-In																				
School Director Region 6																				
Douglas Stone		X							U		X			X						
Gerald Danson		X		X		X	U	X	X	X			X	X	X		X	X		X
Greg Ortiz	X		X							X	X			X	X					X
Shlomo Archibald			X	X		X			X			X	X		X	X		X	X	X
Delores DeVan	X					X											X	X		
Write-In						X														
Write-In																				
Commissioner Seat 2																				
Tetty Rogiers	X	X	X	X	U	X	X	X	X	X	X		X	X	X	X	X	U	X	X
Write-In													X							
Referendum A																				
Yes	X	X	U	X	U		U	X	X		U	X	U		X	X	U		U	
No						X				X					X				X	X
Precinct 3 REP																				
	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10	B 11	B 12	B 13	B 14	B 15	B 16	B 17	B 18	B 19	
President of the United States																				
James Collins	X	X		U		X		X		X			X			X			X	
Alexander P. Bicket					X		X				X			X			X			
Carol Koethen			X						X			X							X	
Write-In															X					
United States Senator																				
Bob Ford	U					X		X		X					X				X	
Colby Lincoln		X		X	X		X	X		X		X		X		X	X			
Write-In			X										X						X	
Representative in Congress 10th District																				
Cheryl Simon		X		X					X		X				X				X	X
Lois Koss	X		X		X	X	X	X		X		X	X	X		X				
Write-In																	X			
Governor																				
Dean Lindsey				X			X				X		X			X				
Don Etter			X		X							X			X				X	
Joe Carlton	X					X			X	X				X			X			
Edwin Lewis		X																	X	
Samuel Lawton								X												
Write-In																				
Lieutenant Governor																				
Scott Montes	X		X			X		X				X	X		X		X	X		
Saul Currier				X						X									X	
Arnold Krill		X			X		X		X					X		X				
Write-In											X									
Representative in the General Assembly 84th District																				
Peter Valle	X	X	X	X	U	X	X		X	X	X	X	X	X		X		X	X	
Write-In								X							X		X		X	
Presidential Nomination Delegation																				
Gloria Dillion	X				X	U	X				X			X		X				
Heather Heidelbaugh	X					U		X	X		X					X			X	
Herbert Devine	X				X	U	X				X				X	X				
George A. Fisk		X			X		X				X		X		X			X		
Doris Shiddles		X										X			X		X	X		
Andre Ninia		X		X				X				X					X	X	X	
Brian Getz			X					X		X			X							
Chad Snow			X	X					X	X			X	X	X					
Diane Rubin			X										X						X	
Elizabeth Piazza				X														X		

Neil Carey	X	X		X		X	X	X		X		X	X	X		X		X	X	X
Saul Currier			X		X				X						X		X			
Write-In										X										
Presidential Nomination Delegation																				
Vincent Seymour			U		X		X		X			X	X			X		U	X	X
Toni Hamilton	X	X	U	X	X	X	X	X		X		X	X	X		X		U	X	X
Sam Patel			U		X		X		X			X	X		X	X		U	X	X
Robert Rocco	X	X	U	X	U	X		X		X		X	X	X		X		U		X
Renee Cohn Jubelrier	X	X		X	U	X		X		X			X	X		X				
Morton Steele	X	U		X		X		X		X			X	X		X				
Mary Burke							X		X			X				X			X	
Nyda E. Hambin							X					X				X			X	
Write-In									X	X										
Write-In										X										
Write-In										X										
Write-In										X										
Judge of the Superior Court																				
Linda Gapp			X			X		X		X		X						X		
Patricia Smallmon	X	X		X	X		X		X	X			X	X		X	X		X	X
Write-In															X					
Judge of the Commonwealth Court																				
Eugene Ruff	X	X		X		X	X		X		X	X		X	X		X		X	X
Lewis Tese			X		X			X		X			X			X		X		
Write-In																				
Judge of the Court of Common Pleas																				
Joanne Shollzert		X	X		X	X		X	X		X		X	X	X		X		X	X
Kerry Jones			X	X	X	U	X	X		X	X	X	X		X		X	X	X	X
Steven Miller		X					X		X	X			X			X				
Shirley Henning				X						X			X					X		
Write-In	X														X					
Write-In	X																			
County Chief Executive																				
Micheal Santarcangelo	X		X	X		X	X		X	X	X		X		X	X		X	X	X
Charles Place					X			X				X		X			X			
Write-In		X																		
School Director Region 6																				
Douglas Stone	X		X					X			X	X				X		X		
Gerald Danson		X	X	X	X	X				X		X	X			X	X	X		X
Greg Ortiz	X			X					X		X					X				
Shlomo Archibald		X			X		X	X	X	X			X	X			X		X	X
Delores DeVan						X	X							X	X				X	
Write-In															X					
Write-In																				
Commissioner Seat 3																				
Arnold Wells	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
Write-In								X												
Referendum A																				
Yes	X		X		X		X		X		X		X		X		X		X	
No		X		X		X		X		X		X		X		X		X		X

Precinct 3 Non Partisan	B 1	B 2	B 3	B 4	B 5
Referendum A					
Yes	X		X		U
No		X		X	

Test Results:

Precinct 1 REP

President of the United States

James Collins	10
Alexander P. Bicket	4
Carol Koethen	3
Write-In	2
Undervotes	1

United States Senator

Bob Ford	6
Colby Lincoln	12
Write-In	2
Undervotes	0

Representative in Congress 5th District

Ben Baker	15
Write-In	4
Undervotes	1

Governor

Dean Lindsey	5
Don Etter	5
Joe Carlton	7
Edwin Lewis	2
Samuel Lawton	1
Write-In	0
Undervotes	0

Lieutenant Governor

Scott Montes	4
Saul Currier	4
Arnold Krill	9
Write-In	2
Undervotes	1

Representative in the General Assembly 83rd District

Harry Rider	12
Robert Tyrell	6
Write-In	2
Undervotes	0

Presidential Nomination Delegation

Gloria Dillion	14
Heather Heidelbaugh	8
Herbert Devine	13
George A. Fisk	4
Doris Shiddles	4
Andre Ninia	3
Brian Getz	3
Chad Snow	2
Diane Rubin	1
Elizabeth Piazza	2
Write-In	5
Undervotes	1

Judge of the Superior Court

Richard Maxian	5
Marjorie Hall	5
Robert L. Linkey	8
Write-In	1
Undervotes	1

Judge of the Commonwealth Court

Chris Carpenter	17
Write-In	1
Undervotes	2

Judge of the Court of Common Pleas

Mary L. Daniel	12
John Roy	3
Jack "Duke" Brodisky	11
Jon Young	5
Vic Stabile	3
Write-In	2
Undervotes	4

County Chief Executive

Norman Powers	12
Sandra Reilly	6
Write-In	1
Undervotes	1

School Director Region 6

Gerald Danson	11
Greg Ortiz	6
Shlomo Archibald	14
Delores DeVan	6
Write-In	1
Undervotes	2

Commissioner Seat 1

Stephen Harrick	16
Write-In	2
Undervotes	2

Referendum A

Yes	12
No	5
Undervote	3

Precinct 1 DEM**President of the United States**

Barry Josey	6
Calvin Marino	12
Write-In	1
Undervotes	1

United States Senator

Oscar Draper	13
Carter McGaw	6
Write-In	1
Undervotes	0

Representative in Congress 5th District

Barbara Barret Hicks	13
Clinton Testo	6
Write-In	1
Undervotes	0

Governor

Charles Jasen	12
Shirley Henning	7
Write-In	1
Undervotes	0

Lieutenant Governor

Sherman R. Bucher	3
Richard V. Suits	3
Tabathia Song	4
Kenneth Interlicchio	9
Write-In	1
Undervotes	0

Representative in the General Assembly 83rd District

R. J. Abbott	12
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Peter F. Saxton	6
Write-In	1
Undervotes	1
Presidential Nomination Delegation	
Vincent Seymour	8
Toni Hamilton	10
Sam Patel	9
Robert Rocco	11
Renee Cohn Jubelrier	9
Morton Steele	8
Mary Burke	5
Nyda E. Hambin	4
Write-In	5
Undervotes	11
Judge of the Superior Court	
Linda Gapp	6
Patricia Smallmon	12
Write-In	1
Undervotes	1
Judge of the Commonwealth Court	
Eugene Ruff	11
Lewis Tese	8
Write-In	0
Undervotes	1
Judge of the Court of Common Pleas	
Joanne Shollzert	12
Kerry Jones	13
Steven Miller	6
Shirley Henning	5
Write-In	1
Undervotes	3
County Chief Executive	
Micheal Santarcangelo	13
Charles Place	7
Write-In	0
Undervotes	0
School Director Region 6	
Douglas Stone	7
Gerald Danson	13
Greg Ortiz	6
Shlomo Archibald	11
Delores DeVan	3
Write-In	0
Undervotes	0
Commissioner Seat 1	
George Fisk	19
Write-In	0
Undervotes	1
Referendum A	
Yes	12
No	6
Undervote	2
Precinct 2 REP	
President of the United States	
James Collins	11
Alexander P. Bicket	4
Carol Koethen	3

Write-In	1
Undervotes	1
United States Senator	
Bob Ford	7
Colby Lincoln	12
Write-In	1
Undervotes	0
Representative in Congress 5th District	
Ben Baker	16
Write-In	2
Undervotes	2
Governor	
Dean Lindsey	5
Don Etter	5
Joe Carlton	7
Edwin Lewis	2
Samuel Lawton	1
Write-In	0
Undervotes	0
Lieutenant Governor	
Scott Montes	4
Saul Currier	5
Arnold Krill	9
Write-In	2
Undervotes	0
Representative in the General Assembly 83rd District	
Harry Rider	13
Robert Tyrell	6
Write-In	1
Undervotes	0
Presidential Nomination Delegation	
Gloria Dillion	11
Heather Heidelbaugh	8
Herbert Devine	8
George A. Fisk	3
Doris Shiddles	4
Andre Ninia	4
Brian Getz	5
Chad Snow	3
Diane Rubin	3
Elizabeth Piazza	4
Write-In	5
Undervotes	2
Judge of the Superior Court	
Richard Maxian	5
Marjorie Hall	5
Robert L. Linkey	9
Write-In	1
Undervotes	0
Judge of the Commonwealth Court	
Chris Carpenter	17
Write-In	1
Undervotes	2
Judge of the Court of Common Pleas	
Mary L. Daniel	13
John Roy	6
Jack "Duke" Brodisky	13
Jon Young	4
Vic Stabile	4
Write-In	0

Undervotes	0
County Chief Executive	
Norman Powers	11
Sandra Reilly	8
Write-In	0
Undervotes	1
School Director Region 6	
Gerald Danson	12
Greg Ortiz	8
Shlomo Archibald	11
Delores DeVan	4
Write-In	2
Undervotes	3
Commissioner Seat 2	
Steve West	15
Write-In	4
Undervotes	1
Referendum A	
Yes	15
No	3
Undervote	2
Precinct 2 DEM	
President of the United States	
Barry Josey	11
Calvin Marino	6
Write-In	2
Undervotes	1
United States Senator	
Oscar Draper	10
Carter McGaw	7
Write-In	2
Undervotes	1
Representative in Congress 5th District	
Barbara Barret Hicks	13
Clinton Testo	5
Write-In	2
Undervotes	0
Governor	
Charles Jasen	12
Shirley Henning	6
Write-In	2
Undervotes	0
Lieutenant Governor	
Sherman R. Bucher	5
Richard V. Suits	1
Tabathia Song	4
Kenneth Interlicchio	9
Write-In	1
Undervotes	0
Representative in the General Assembly 83rd District	
R. J. Abbott	14
Peter F. Saxton	4
Write-In	1
Undervotes	1
Presidential Nomination Delegation	
Vincent Seymour	7

Toni Hamilton	13
Sam Patel	9
Robert Rocco	13
Renee Cohn Jubelrier	8
Morton Steele	9
Mary Burke	4
Nyda E. Hambin	4
Write-In	4
Undervotes	9
Judge of the Superior Court	
Linda Gapp	7
Patricia Smallmon	11
Write-In	2
Undervotes	0
Judge of the Commonwealth Court	
Eugene Ruff	10
Lewis Tese	8
Write-In	1
Undervotes	1
Judge of the Court of Common Pleas	
Joanne Shollzert	13
Kerry Jones	11
Steven Miller	8
Shirley Henning	5
Write-In	0
Undervotes	3
County Chief Executive	
Micheal Santarcangelo	12
Charles Place	7
Write-In	0
Undervotes	1
School Director Region 6	
Douglas Stone	3
Gerald Danson	12
Greg Ortiz	7
Shlomo Archibald	11
Delores DeVan	4
Write-In	1
Undervotes	2
Commissioner Seat 2	
Tetty Rogiers	17
Write-In	1
Undervotes	2
Referendum A	
Yes	8
No	5
Undervote	7
Precinct 3 REP	
President of the United States	
James Collins	9
Alexander P. Bicket	5
Carol Koethen	4
Write-In	1
Undervotes	1
United States Senator	
Bob Ford	5
Colby Lincoln	11
Write-In	3
Undervotes	1

Representative in Congress 10th District

Cheryl Simon	7
Lois Koss	12
Write-In	1
Undervotes	0

Governor

Dean Lindsey	5
Don Etter	5
Joe Carlton	7
Edwin Lewis	2
Samuel Lawton	1
Write-In	0
Undervotes	0

Lieutenant Governor

Scott Montes	9
Saul Currier	3
Arnold Krill	7
Write-In	1
Undervotes	0

Representative in the General Assembly 84rd District

Peter Valle	15
Write-In	4
Undervotes	1

Presidential Nomination Delegation

Gloria Dillion	6
Heather Heidelbaugh	6
Herbert Devine	6
George A. Fisk	8
Doris Shiddles	5
Andre Ninia	7
Brian Getz	5
Chad Snow	7
Diane Rubin	3
Elizabeth Piazza	3
Write-In	1
Undervotes	3

Judge of the Superior Court

Richard Maxian	6
Marjorie Hall	4
Robert L. Linkey	9
Write-In	1
Undervotes	0

Judge of the Commonwealth Court

Chris Carpenter	16
Write-In	1
Undervotes	3

Judge of the Court of Common Pleas

Mary L. Daniel	11
John Roy	5
Jack "Duke" Brodisky	12
Jon Young	5
Vic Stabile	3
Write-In	2
Undervotes	2

County Chief Executive

Norman Powers	12
Sandra Reilly	8
Write-In	0
Undervotes	0

School Director Region 6

Gerald Danson	10
Greg Ortiz	7
Shlomo Archibald	16
Delores DeVan	7
Write-In	0
Undervotes	0
Commissioner Seat 3	
William Malicki	13
Gary Klemann	6
Write-In	0
Undervotes	1
Referendum A	
Yes	12
No	5
Undervote	3
Precinct 3 DEM	
President of the United States	
Barry Josey	7
Calvin Marino	11
Write-In	2
Undervotes	0
United States Senator	
Oscar Draper	11
Carter McGaw	8
Write-In	1
Undervotes	0
Representative in Congress 10th District	
William Sullivan	17
Write-In	2
Undervotes	1
Governor	
Charles Jasen	11
Shirley Henning	7
Write-In	1
Undervotes	1
Lieutenant Governor	
Sherman R. Bucher	7
Richard V. Suits	2
Tabathia Song	3
Kenneth Interlicchio	6
Write-In	1
Undervotes	1
Representative in the General Assembly 84rd District	
Neil Carey	14
Saul Currier	5
Write-In	1
Undervotes	0
Presidential Nomination Delegation	
Vincent Seymour	8
Toni Hamilton	10
Sam Patel	9
Robert Rocco	11
Renee Cohn Jubelrier	9
Morton Steele	8
Mary Burke	5
Nyda E. Hambin	4
Write-In	5
Undervotes	11

Judge of the Superior Court	
Linda Gapp	6
Patricia Smallmon	13
Write-In	1
Undervotes	0
Judge of the Commonwealth Court	
Eugene Ruff	13
Lewis Tese	7
Write-In	0
Undervotes	0
Judge of the Court of Common Pleas	
Joanne Shollzert	13
Kerry Jones	13
Steven Miller	6
Shirley Henning	4
Write-In	3
Undervotes	1
County Chief Executive	
Micheal Santarcangelo	14
Charles Place	5
Write-In	1
Undervotes	0
School Director Region 6	
Douglas Stone	7
Gerald Danson	11
Greg Ortiz	5
Shlomo Archibald	11
Delores DeVan	5
Write-In	1
Undervotes	0
Commissioner Seat 3	
Arnold Wells	19
Write-In	1
Undervotes	0
Referendum A	
Yes	10
No	10
Undervote	0
Precinct 3 Non Partisan	
Referendum A	
Yes	2
No	2
Undervote	1
Cumulative Totals REP:	
President of the United States	
James Collins	30
Alexander P. Bicket	13
Carol Koethen	10
Write-In	4
Undervote	3
United States Senator	
Bob Ford	18
Colby Lincoln	35
Write-In	6
Undervote	1

Representative in Congress 5th District

Ben Baker	31
Write-In	6
Undervote	3

Representative in Congress 10th District

Cheryl Simon	7
Lois Koss	12
Write-In	1
Undervote	0

Governor

Dean Lindsey	15
Don Etter	15
Joe Carlton	21
Edwin Lewis	6
Samuel Lawton	3
Write-In	0
Undervotes	0

Lieutenant Governor

Scott Montes	17
Saul Currier	12
Arnold Krill	25
Write-In	5
Undervotes	1

Representative in the General Assembly 83rd District

Harry Rider	25
Robert Tyrell	12
Write-In	3
Undervotes	0

Representative in the General Assembly 84rd District

Peter Valle	15
Write-In	4
Undervotes	1

Presidential Nomination Delegation

Gloria Dillion	31
Heather Heidelbaugh	22
Herbert Devine	27
George A. Fisk	15
Doris Shiddles	13
Andre Ninia	14
Brian Getz	13
Chad Snow	12
Diane Rubin	7
Elizabeth Piazza	9
Write-In	11
Undervotes	6

Judge of the Superior Court

Richard Maxian	16
Marjorie Hall	14
Robert L. Linkey	26
Write-In	3
Undervotes	1

Judge of the Commonwealth Court

Chris Carpenter	50
Write-In	3
Undervotes	7

Judge of the Court of Common Pleas

Mary L. Daniel	36
John Roy	14
Jack "Duke" Brodisky	36

Jon Young	14
Vic Stabile	10
Write-In	4
Undervotes	6
County Chief Executive	
Norman Powers	35
Sandra Reilly	22
Write-In	1
Undervotes	2
School Director Region 6	
Gerald Danson	33
Greg Ortiz	21
Shlomo Archibald	41
Delores DeVan	17
Write-In	3
Undervotes	5
Commissioner Seat 1 REP	
Stephen Harrick	16
Write-In	2
Undervotes	2
Commissioner Seat 2 REP	
Steve West	15
Write-In	4
Undervotes	1
Commissioner Seat 3 REP	
William Malicki	13
Gary Klemann	6
Write-In	0
Undervotes	1
Referendum A REP	
Yes	39
No	13
Undervote	8
Cumulative Totals DEM:	
President of the United States	
Barry Josey	24
Calvin Marino	29
Write-In	5
Undervotes	2
United States Senator	
Oscar Draper	34
Carter McGaw	21
Write-In	4
Undervotes	1
Representative in Congress 5th District	
Barbara Barret Hicks	26
Clinton Testo	11
Write-In	3
Undervotes	0
Representative in Congress 10th District	
William Sullivan	17
Write-In	2
Undervotes	1
Governor	
Charles Jasen	35

Shirley Henning	20
Write-In	4
Undervotes	1
Lieutenant Governor	
Sherman R. Bucher	15
Richard V. Suits	6
Tabathia Song	11
Kenneth Interlicchio	24
Write-In	3
Undervotes	1
Representative in the General Assembly 83rd District	
R. J. Abbott	26
Peter F. Saxton	10
Write-In	2
Undervotes	2
Representative in the General Assembly 84rd District	
Neil Carey	14
Saul Currier	5
Write-In	1
Undervotes	0
Presidential Nomination Delegation	
Vincent Seymour	23
Toni Hamilton	33
Sam Patel	27
Robert Rocco	35
Renee Cohn Jubelrier	26
Morton Steele	25
Mary Burke	14
Nyda E. Hambin	12
Write-In	14
Undervotes	31
Judge of the Superior Court	
Linda Gapp	19
Patricia Smallmon	36
Write-In	4
Undervotes	1
Judge of the Commonwealth Court	
Eugene Ruff	34
Lewis Tese	23
Write-In	1
Undervotes	2
Judge of the Court of Common Pleas	
Joanne Shollzert	38
Kerry Jones	37
Steven Miller	20
Shirley Henning	14
Write-In	4
Undervotes	7
County Chief Executive	
Micheal Santarcangelo	39
Charles Place	19
Write-In	1
Undervotes	1
School Director Region 6	
Douglas Stone	17
Gerald Danson	36
Greg Ortiz	18
Shlomo Archibald	33
Delores DeVan	12
Write-In	2

Undervotes	2
Commissioner Seat 1 DEM	
George Fisk	19
Write-In	0
Undervotes	1
Commissioner Seat 2 DEM	
Tetty Rogiers	17
Write-In	1
Undervotes	2
Commissioner Seat 3 DEM	
Arnold Wells	19
Write-In	1
Undervotes	0
Referendum A DEM	
Yes	30
No	21
Undervote	9
Cumulative Totals Non Partisan:	
Referendum A	
Yes	2
No	2
Undervote	1

Election Definition: Pennsylvania Certification General Election

General Election Description:

A general election combining presidential year contests, non-presidential year contests, and municipal contests into a single election held in 3 precincts one of which is a split precinct on the “Representative in the General Assembly” contests. This election contains 21 contests compiled into 4 ballot styles (excluding language styles). 15 of the contests are in all ballot styles. The other 6 are split between at least 2 of the precincts with a maximum of 21 different contests spread across the 3 precincts. All voting variations supported by the Commonwealth of Pennsylvania are defined in this election. The voting variations are as follows:

- Partisan contest
- Non-Partisan contest
- N of M contest
- Referendum contest
- Retention Contest
- Straight Party voting
- Write-In voting
- Split Precinct
- Cross-Party Nominated

This general election was designed to functionally test the handling of multiple ballot styles across geographical subdivisions, support for English and Spanish languages, support for all Pennsylvania voting variations, and audio support for English and Spanish.

Configuration:

EMS computer loaded with software certified for use in Pennsylvania to create the following configuration:

Name: Pennsylvania Certification General Election

Voting Devices: 1 machine for each precinct

Precincts: Precinct 1, Precinct 2 split into 2a and 2b, Precinct 3

Parties: Republican, Democratic, Green, Libertarian

Languages: English, Spanish

Totals Contests: 21

Contests as follows:

Precinct 1	Precinct 2a	Precinct 2b	Precinct 3
Straight Party			
Republican			
Democratic			
Green			
Libertarian			
President/Vice President of the United States			
Vote for the Candidate of One Party for President and Vice President or insert the names of candidates			
James Collins			
Arthur Remus			

<p><i>Republican</i></p> <p>Calvin Marino Keith Satterwhite <i>Democratic</i></p> <p>John P. Defazio Louis Denn <i>Green</i></p> <p>June Perkins David Heroux <i>Libertarian</i></p> <p>Write-In</p>	
<p align="center">United States Senator Vote for One</p> <p>Colby Lincoln <i>Republican</i></p> <p>Oscar Draper <i>Democratic</i></p> <p>Eric Sheely <i>Libertarian</i></p> <p>Write-In</p>	
<p align="center">Representative in Congress 5th District Vote for One</p> <p>Ben Baker <i>Republican</i></p> <p>Barbara Barrett Hicks <i>Democratic</i></p> <p>Write-In</p>	<p align="center">Representative in Congress 10th District Vote for One</p> <p>Lois Koss <i>Republican</i></p> <p>William Sullivan <i>Democratic</i></p> <p>Write-In</p>
<p align="center">Governor/Lieutenant Governor Vote for the Candidate of One Party for Governor and Lieutenant Governor</p> <p>Joe Carlton Arnold Krill <i>Republican</i></p> <p>Charles Jasen Kenneth Interlicchio <i>Democratic</i></p> <p>Robert Marsh Theodore Kopp <i>Green</i></p> <p>Write-In</p>	
<p align="center">Representative in the General Assembly 83rd District Vote for One</p> <p>Harry Rider <i>Republican</i></p> <p>R. J. Abbott <i>Democratic</i></p>	<p align="center">Representative in the General Assembly 84th District Vote for One</p> <p>Peter Valle <i>Republican</i></p> <p>Neil Carey <i>Democratic</i></p>

Derek Carlson <i>Libertarian</i> Write-In	Write-In
<p style="text-align: center;">Judge of the Superior Court Vote for One</p> Robert L. Linkey <i>Republican</i> Patricia Smallmon <i>Democratic</i> Write-In	
<p style="text-align: center;">Judge of the Commonwealth Court Vote for One</p> Chris Carpenter <i>Republican</i> Eugene Ruff <i>Democratic</i> Write-In	
<p style="text-align: center;">Judge of the Court of Common Pleas Vote for Not More Than Two</p> Mary L. Daniel <i>Republican</i> Jack "Duke" Brodisky <i>Republican</i> Joanne Schollzert <i>Democratic</i> Kerry Jones <i>Democratic</i> Write-In Write-In	
<p style="text-align: center;">County Chief Executive Four Year Term Vote for One</p> Norman Powers <i>Republican</i> Micheal Santarcangelo <i>Democratic</i> Write-In	
<p style="text-align: center;">County Controller Four Year Term Vote for One</p> Paul M Bertel-Lincoln <i>Republican</i>	

Donna Berke <i>Democratic</i> Write-In		
District Attorney Four Year Term Vote for One		
Franklin Margo <i>Republican</i> Donald Hensley <i>Democratic</i> Write-In		
School Director Region 6 Four Year Term Vote for Not More Than Two		
Gerald Danson <i>Republican/Democratic</i> Shlomo Archibald <i>Republican/Democratic</i> Write-In Write-In		
Commissioner Seat 1 Four Year Term Vote for One Stephen Harrick <i>Republican</i> George Fisk <i>Democratic</i> Write-In	Commissioner Seat 2 Four Year Term Vote for One Steve West <i>Republican</i> Tetty Rogiers <i>Democratic</i> Write-In	Commissioner Seat 3 Four Year Term Vote for One William Malicki <i>Republican</i> Arnold Wells <i>Democratic</i> Write-In
Statewide Referendum Water and Sewer Improvements Bond Referendum		
Do you favor the incurring of indebtedness by the Commonwealth of \$400,000,000 for grants and loans to municipalities and public utilities for the cost of all labor, materials, necessary operational machinery and equipment, lands, property, rights and easements, plans and specifications, surveys, estimates of costs and revenues, prefeasibility studies, engineering and legal services and all other expenses necessary or incident to the acquisition, construction, improvement, expansion, extension, repair or rehabilitation of all or part of the drinking water system, storm water, nonpoint source projects, nutrient credits and wastewater treatment system projects? Yes No		
Retention of Tony Grzanich		
Shall Tony Grzanich be retained for an additional term as Justice of the Supreme Court of the Commonwealth of Pennsylvania? Yes		

No

Retention of Debbie Marks

Shall Debbie Marks be retained for an additional term as Justice of the Supreme Court of the Commonwealth of Pennsylvania?

Yes

No

Spanish

Distrito electoral 1	Distrito electoral 2a	Distrito electoral 2b	Distrito electoral 3
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Partido íntegro

Republicano

Demócrata

Verde

Libertario

Presidente/Vicepresidente de los Estados Unidos

Vote para el candidato de un partido para presidente y vicepresidente o inserte los nombres de los candidatos

James Collins
Arthur Remus
Republicano

Calvin Marino
Keith Satterwhite
Demócrata

John P. Defazio
Louis Denn
Verde

June Perkins
David Heroux
Libertario

Por escrito

Senador de los Estados Unidos

Vote por uno

Colby Lincoln
Republicano

Oscar Draper
Demócrata

Eric Sheely
Libertario

Por escrito

Representante en el Congreso

5° Distrito
Vote por uno

Ben Baker
Republicano

Representante en el

Congreso
10.º Distrito
Vote por uno

Lois Koss

Barbara Barret Hicks <i>Demócrata</i> Por escrito	<i>Republicano</i> William Sullivan <i>Demócrata</i> Por escrito
<p style="text-align: center;">Gobernador/vicegobernador Vote para el candidato de un partido para gobernador y vicegobernador</p> Joe Carlton Arnold Krill <i>Republicano</i> Charles Jasen Kenneth Interlicchio <i>Demócrata</i> Robert Marsh Theodore Kopp <i>Verde</i> Por escrito	
<p style="text-align: center;">Representante en la Asamblea General 83.º Distrito Vote por uno</p> Harry Rider <i>Republicano</i> R. J. Abbott <i>Demócrata</i> Derek Carlson <i>Libertario</i> Por escrito	<p style="text-align: center;">Representante en la Asamblea General 84.º Distrito Vote por uno</p> Peter Valle <i>Republicano</i> Neil Carey <i>Demócrata</i> Por escrito
<p style="text-align: center;">Juez de la corte suprema Vote por uno</p> Robert L. Linkey <i>Republicano</i> Patricia Smallmon <i>Demócrata</i> Por escrito	
<p style="text-align: center;">Juez de la corte del estado Vote por uno</p> Chris Carpenter <i>Republicano</i> Eugene Ruff <i>Demócrata</i> Por escrito	
<p style="text-align: center;">Juez de la corte de primeras instancias No vote por más de dos</p> Mary L. Daniel	

<p><i>Republicano</i></p> <p>Jack "Duke" Brodisky <i>Republicano</i></p> <p>Joanne Schollzert <i>Demócrata</i></p> <p>Kerry Jones <i>Demócrata</i></p> <p>Por escrito</p> <p>Por escrito</p>
<p>Jefe principal del condado Término de cuatro años Vote por uno</p> <p>Norman Powers <i>Republicano</i></p> <p>Micheal Santarcangelo <i>Demócrata</i></p> <p>Por escrito</p>
<p>Contralor del condado Término de cuatro años Vote por uno</p> <p>Paul M Bertel-Lincoln <i>Republicano</i></p> <p>Donna Berke <i>Demócrata</i></p> <p>Por escrito</p>
<p>Procurador del distrito Término de cuatro años Vote por uno</p> <p>Franklin Margo <i>Republicano</i></p> <p>Donald Hensley <i>Demócrata</i></p> <p>Por escrito</p>
<p>Director de la escuela Región 6 Término de cuatro años No vote por más de dos</p> <p>Gerald Danson <i>Republicano/Demócrata</i></p> <p>Shlomo Archibald <i>Republicano/Demócrata</i></p> <p>Por escrito</p> <p>Por escrito</p>

Comisionado Puesto 1 Término de cuatro años Vote por uno	Comisionado Puesto 2 Término de cuatro años Vote por uno	Comisionado Puesto 3 Término de cuatro años Vote por uno
Stephen Harrick <i>Republicano</i>	Steve West <i>Republicano</i>	William Malicki <i>Republicano</i>
George Fisk <i>Demócrata</i>	Tetty Rogiers <i>Demócrata</i>	Arnold Wells <i>Demócrata</i>
Por escrito	Por escrito	Por escrito

Referendum a nivel estatal
Referéndum de bono de mejoramientos de agua y drenaje

¿Está usted a favor de incurrir un endeudamiento por el Estado de \$400,000,000 por subvenciones y prestamos a municipalidades y servicios públicos por el cotos de toda la mano de obra, materiales, maquinaria operacional necesaria y equipo, tierras, propiedad, derechos y servidumbres, planos y especificación, encuestas, calculo de costos e ingresos, estudios de previabilidad, servicios de legales y de ingeniería y todos los gastos necesarios o incidente a la adquisición, construcción, mejora, expansión, extensión, reparación o rehabilitación de todo o parte del sistema de agua potable, agua pluviales, proyectos de recurso sin punto, créditos de nutrientes y proyectos de sistemas de tratamiento de aguas negras?

Sí

No

Retención de Tony Grzanich

¿Debe Tony Grzanich ser retenido por un término adicional como magistrado de la corte suprema del Estado de Pennsylvania?

Sí

No

Retención de Debbie Marks

¿Debe Debbie Marks ser retenida por un término adicional como magistrada de la corte suprema del Estado de Pennsylvania?

Sí

No

Voting Pattern:
 Ballots will be voted and cast with the following pattern. Ballots 3 and 13 will be input using the alternative language option. Ballots 10 and 18 will be input using the ADA audio capability. Ballots 5 and 10 in Precinct 1 and Ballot 10 in Precinct 3 will exercise the Pennsylvania Method for straight party.

The following test pattern will be input for the given precinct:

Precinct 1	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10	B 11	B 12	B 13	B 14	B 15	B 16	B 17	B 18	B 19	B 20
Straight Party																				
Republican	X		X		P	U	U		U		U	U	U	U		U	U	U	U	U
Democratic		X		X						P										
Green																				
Libertarian								X							X					
President/Vice President of the United States																				
James Collins						X			X		X	X					X			U
Arthur Remus																				
Calvin Marino							X						X	X		X		X		
Keith Satterwhite																				
John P. Defazio																				

Louis Denn																			
June Perkins							X											X	
David Heroux																			
Write-In																			X
United States Senator																			
Colby Lincoln							X											X	
Oscar Draper							X				X	X					X	X	X
Eric Sheely							X												
Write-In								X											X
Representative in Congress 5th District																			
Ben Baker							X	X				U				X	X		X
Barbara Barrett Hicks									X			X						X	
Write-In								X									X		
Governor/Lieutenant Governor																			
Joe Carlton								X	X			X	X				X	X	
Arnold Krill																			
Charles Jasen							X										X		
Kenneth Interlicchio																			X
Robert Marsh																			
Theodore Kopp																			
Write-In							X												
Representative in the General Assembly 83rd District																			
Harry Rider													X	X				X	X
R. J. Abbott							X					X							X
Derek Carlson																	X		
Write-In								X										X	
Judge of the Superior Court																			
Robert L. Linkey							X		X			U					X		
Patricia Smallmon								X		X			X	X				X	X
Write-In																			X
Judge of the Commonwealth Court																			
Chris Carpenter									X	X			X						
Eugene Ruff							X	X						X			X	X	
Write-In													X						X
Judge of the Court of Common Pleas																			
Mary L. Daniel							X					X	X	X				X	X
Jack "Duke" Brodisky							X	X				X						X	X
Joanne Schollzert								X	X					X	X		X	X	
Kerry Jones								X	X				X	X					
Write-In									X	P									
Write-In										U									
County Chief Executive																			
Norman Powers							X	X				X				U	X		X
Micheal Santarcangelo									X	X							X		
Write-in																			X
County Controller																			
Paul M Bertel-Lincoln								U			X			X	X	X		X	U
Donna Berke									X						X				X
Write-In											X				X				
District Attorney																			
Franklin Margo							X				X			X			X	X	
Donald Hensley								X					X		X				X
Write-In									X										X
School Director Region 6																			
Gerald Danson							X	X			X	X	X		X	U		X	X
Shlomo Archibald							X	X	X		X	X	X		U	U		X	X
Write-In									X	X								X	
Write-In																		U	
Commissioner Seat 1																			
Stephen Harrick								X	X	X	X		X	X			X		X
George Fisk							X						X				X		
Write-in																			X

Statewide Referendum																				
Yes			X	U	X							X		X	X	X	U			
No	X	X				X	X	X	X	X	X		X					X	X	X
Retention of Tony Grzanich																				
Yes	X	X			X	X		X		X	X	X	X		X			U	X	
No			X	X			X	X	X					X		X	X		X	
Retention of Debbie Marks																				
Yes		X		X	X	X			X	X	X	X	X		X		U	U		
No	X		X				X	X						X	X				X	
Precinct 2a																				
	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10	B 11	B 12	B 13	B 14	B 15	B 16	B 17	B 18	B 19	B 20
Straight Party																				
Republican	X	X	X		U	U	U		U	P	U	U	U	U		U	U	U	U	U
Democratic				X																
Green																				
Libertarian								X							X					
President/Vice President of the United States																				
James Collins					X	X	X				X	X				X	X	X	X	
Arthur Remus																				
Calvin Marino									X				X	X						
Keith Satterwhite																				
John P. Defazio																				
Louis Denn																				
June Perkins								X							X					
David Heroux																				
Write-In																				X
United States Senator																				
Colby Lincoln					X		X				X	X		X			X	X		X
Oscar Draper						X			X				X						X	
Eric Sheely								X							X					
Write-In																X				
Representative in Congress 5 th District																				
Ben Baker					X	X	X		X		X			X	U	X	X	X		
Barbara Barrett								X				X							X	X
Hicks																				
Write-In													X							
Governor/Lieutenant Governor																				
Joe Carlton					X		X	X	X			X			U	X	X		X	X
Arnold Krill																				
Charles Jasen						X					X		X					X		
Kenneth Interlicchio																				
Robert Marsh																				
Theodore Kopp																				
Write-In														X						
Representative in the General Assembly 83 rd District																				
Harry Rider					X	X			X					X		X	X			X
R. J. Abbott								X			X	X	X					X	X	
Derek Carlson								X							X					
Write-In																				
Judge of the Superior Court																				
Robert L. Linkey						U	X		X			X	X	X				X	X	X
Patricia Smallmon					X						X				X	X	X			
Write-In								X												
Judge of the Commonwealth Court																				
Chris Carpenter					X	X	X		X		X	X		X		X		U	X	
Eugene Ruff								X					X				X			X
Write-In															X					
Judge of the Court of Common Pleas																				
Mary L. Daniel					X	X	X	X		X		X	X	X			X	X		
Jack "Duke" Brodisky					X	X			X		U		X		X	X				
Joanne Schollzert							X		X	P							X		X	X
Kerry Jones								X		P			X				X			X

President/Vice President of the United States																	
James Collins					X			X	X			X	X		X	X	X
Arthur Remus																	
Calvin Marino					X					X							
Keith Satterwhite																	
John P. Defazio												X		X			
Louis Denn																	
June Perkins						X											X
David Heroux																	
Write-In																	
United States Senator																	
Colby Lincoln						X		X			X	X	X	X	X	X	X
Oscar Draper					X				X		X				X		
Eric Sheely							X										X
Write-In																	
Representative in Congress 10th District																	
Lois Koss					X		X	X	X		X		X	X		U	X
William Sullivan						X					X				X		
Write-In												X					
Governor/Lieutenant Governor																	
Joe Carlton					X	X		X			X			X		X	X
Arnold Krill																	
Charles Jasen							X				X					X	X
Kenneth Interlicchio																	
Robert Marsh												X		X			
Theodore Kopp																	
Write-In								X				X					
Representative in the General Assembly 84th District																	
Peter Valle					X		X	X	X		X		X		U	X	
Neil Carey						X					X		X				X
Write-In																	X
Judge of the Superior Court																	
Robert L. Linkey					X	X		X			X	X		X	X	X	X
Patricia Smallmon							X	X					X				X
Write-In											X						
Judge of the Commonwealth Court																	
Chris Carpenter					X			X			X		X	X		X	X
Eugene Ruff						X	X		X			X			X		
Write-In										X							
Judge of the Court of Common Pleas																	
Mary L. Daniel					X								U	X	X		X
Jack "Duke" Brodisky					X	X	X	X				X	X	U	X	X	X
Joanne Schollzert						X	X		X	X		U				X	
Kerry Jones							X	X		X						X	
Write-In									P		X	X					
Write-In										U							
County Chief Executive																	
Norman Powers						X		X	X		X		X	X		X	X
Micheal Santarcangelo					X		X				X		X		X		X
Write-in																	
County Controller																	
Paul M Bertel-Lincoln					U		U	X	X		X			X	X	X	X
Donna Berke						X					X		X			X	
Write-In											X						
District Attorney																	
Franklin Margo							X				X		U			X	X
Donald Hensley					X	X		X	X		X			X	X		X
Write-In											X						
School Director Region 6																	
Gerald Danson					X	X	X	X	X		X	X	U	X	X	U	X
Shlomo Archibald					X	X	X	X	X		X	X	U	X		X	X
Write-In										X					X		
Write-In																	

Commissioner Seat 3																				
William Malicki						X	X	X				X	X		X		X	U	X	
Arnold Wells					X				X				X		X					X
Write-in											X									
Statewide Referendum																				
Yes	X				X			X		U		X			X				U	X
No		X	X	X		X	X		X		X		X	X		X	X	X		
Retention of Tony Grzanich																				
Yes	X	X	X		X	X		X	X	X		X	X		X			X	X	
No				X			X	X				X			X			X		
Retention of Debbie Marks																				
Yes		X		X		X		X	X	X	X	X							X	X
No	X		X		X		X		X				X	X	X	X	X	X		

Test Results:

Precinct 1:

Straight Party

Republican	3
Democratic	3
Green	0
Libertarian	2
Undervote	12

President/Vice President of the United States

James Collins	
Arthur Remus	8
Calvin Marino	
Keith Satterwhite	8
John P .Defazio	
Louis Denn	0
June Perkins	
David Heroux	2
Write-In	1
Undervote	1

United States Senator

Colby Lincoln	6
Oscar Draper	11
Eric Sheely	1
Write-In	2
Undervote	0

Representative in Congress District 5

Ben Baker	10
Barbara Barrett-Hicks	7
Write-In	2
Undervote	1

Governor/Lieutenant Governor

Joe Carlton	
Arnold Krill	12
Charles Jasen	
Kenneth Interlicchio	7
Robert Marsh	
Theodore Kopp	0
Write-In	1
Undervote	0

Representative in the General Assembly District 83

Harry Rider	8
R.J. Abbott	7
Derek Carlson	2
Write-In	3
Undervote	0

Judge of Superior Court	
Robert L. Linkey	7
Patricia Smallmon	11
Write-In	1
Undervote	1
Judge of the Commonwealth Court	
Chris Carpenter	8
Eugene Ruff	9
Write-In	3
Undervote	0
Judge of the Court of Common Pleas	
Mary L. Daniel	11
Jack "Duke" Brodisky	10
Joanne Scholzert	9
Kerry jones	7
Write-In	2
Undervote	1
County Chief Executive	
Norman Powers	8
Micheal Santarcangelo	9
Write-In	2
Undervote	1
County Controller	
Paul M. Bertel-Lincoln	8
Donna Berke	8
Write-In	2
Undervote	2
District Attorney	
Franklin Margo	9
Donald Hensley	8
Write-In	3
Undervote	0
School Director Region 6	
Gerald Danson	15
Shlomo Archibald	14
Write-In	7
Undervote	4
Commissioner Seat 1	
Stephen Harrick	13
George Fisk	6
Write-In	1
Undervote	0
Statewide Referendum	
Yes	6
No	12
Undervote	2
Retention of Tony Grzanich	
Yes	11
No	8
Undervote	1
Retention of Debbie Marks	
Yes	11
No	7
Undervote	2
Precinct 2a:	
Straight Party	
Republican	4
Democratic	1

Green	0
Libertarian	2
Undervote	13
President/Vice President of the United States	
James Collins	
Arthur Remus	13
Calvin Marino	
Keith Satterwhite	4
John P. Defazio	
Louis Denn	0
June Perkins	
David Heroux	2
Write-In	1
Undervote	0
United States Senator	
Colby Lincoln	12
Oscar Draper	5
Eric Sheely	2
Write-In	1
Undervote	0
Representative in Congress District 5	
Ben Baker	13
Barbara Barrett-Hicks	5
Write-In	1
Undervote	1
Governor/Lieutenant Governor	
Joe Carlton	
Arnold Krill	13
Charles Jasen	
Kenneth Interlicchio	5
Robert Marsh	
Theodore Kopp	0
Write-In	1
Undervote	1
Representative in the General Assembly District 83	
Harry Rider	11
R.J. Abbott	7
Derek Carlson	2
Write-In	0
Undervote	0
Judge of Superior Court	
Robert L. Linkey	12
Patricia Smallmon	6
Write-In	1
Undervote	1
Judge of the Commonwealth Court	
Chris Carpenter	13
Eugene Ruff	5
Write-In	1
Undervote	1
Judge of the Court of Common Pleas	
Mary L. Daniel	13
Jack "Duke" Brodisky	9
Joanne Scholzert	7
Kerry Jones	6
Write-In	4
Undervote	1
County Chief Executive	
Norman Powers	13
Micheal Santarcangelo	5
Write-In	1

Undervote	1
County Controller	
Paul M. Bertel-Lincoln	11
Donna Berke	7
Write-In	0
Undervote	2
District Attorney	
Franklin Margo	9
Donald Hensley	10
Write-In	1
Undervote	0
School Director Region 6	
Gerald Danson	17
Shlomo Archibald	15
Write-In	5
Undervote	3
Commissioner Seat 2	
Steve West	11
Tetty Rogiers	6
Write-In	1
Undervote	2
Statewide Referendum	
Yes	6
No	12
Undervote	2
Retention of Tony Grzanich	
Yes	15
No	3
Undervote	2
Retention of Debbie Marks	
Yes	15
No	4
Undervote	1
Precinct 2b:	
Straight Party	
Republican	1
Democratic	4
Green	3
Libertarian	1
Undervote	11
President/Vice President of the United States	
James Collins	
Arthur Remus	10
Calvin Marino	
Keith Satterwhite	7
John P. Defazio	
Louis Denn	2
June Perkins	
David Heroux	1
Write-In	0
Undervote	0
United States Senator	
Colby Lincoln	11
Oscar Draper	6
Eric Sheely	1
Write-In	1
Undervote	1

Representative in Congress District 5

Ben Baker	8
Barbara Barrett-Hicks	10
Write-In	1
Undervote	1

Governor/Lieutenant Governor

Joe Carlton	
Arnold Krill	8
Charles Jasen	
Kenneth Interlicchio	8
Robert Marsh	
Theodore Kopp	3
Write-In	1
Undervote	0

Representative in the General Assembly District 84

Peter Valle	10
Neil Carey	9
Write-In	1
Undervote	0

Judge of Superior Court

Robert L. Linkey	11
Patricia Smallmon	8
Write-In	1
Undervote	0

Judge of the Commonwealth Court

Chris Carpenter	9
Eugene Ruff	8
Write-In	2
Undervote	1

Judge of the Court of Common Pleas

Mary L. Daniel	9
Jack "Duke" Brodisky	7
Joanne Scholzert	9
Kerry Jones	8
Write-In	4
Undervote	3

County Chief Executive

Norman Powers	10
Micheal Santarcangelo	8
Write-In	1
Undervote	1

County Controller

Paul M. Bertel-Lincoln	11
Donna Berke	8
Write-In	0
Undervote	1

District Attorney

Franklin Margo	4
Donald Hensley	16
Write-In	0
Undervote	0

School Director Region 6

Gerald Danson	17
Shlomo Archibald	18
Write-In	2
Undervote	3

Commissioner Seat 2

Steve West	13
Tetty Rogiers	6
Write-In	1

Undervote	0
Statewide Referendum	
Yes	9
No	11
Undervote	0
Retention of Tony Grzanich	
Yes	14
No	5
Undervote	1
Retention of Debbie Marks	
Yes	13
No	6
Undervote	1
Precinct 3:	
Straight Party	
Republican	4
Democratic	1
Green	2
Libertarian	2
Undervote	11
President/Vice President of the United States	
James Collins	
Arthur Remus	13
Calvin Marino	
Keith Satterwhite	3
John P. Defazio	
Louis Denn	2
June Perkins	
David Heroux	2
Write-In	0
Undervote	0
United States Senator	
Colby Lincoln	13
Oscar Draper	5
Eric Sheely	2
Write-In	0
Undervote	0
Representative in Congress District 10	
Lois Koss	14
William Sullivan	4
Write-In	1
Undervote	1
Governor/Lieutenant Governor	
Joe Carlton	
Arnold Krill	11
Charles Jasen	
Kenneth Interlicchio	5
Robert Marsh	
Theodore Kopp	2
Write-In	2
Undervote	0
Representative in the General Assembly District 84	
Peter Valle	12
Neil Carey	6
Write-In	1
Undervote	1
Judge of Superior Court	
Robert L. Linkey	14

Patricia Smallmon	5
Write-In	1
Undervote	0
Judge of the Commonwealth Court	
Chris Carpenter	13
Eugene Ruff	6
Write-In	1
Undervote	0
Judge of the Court of Common Pleas	
Mary L. Daniel	9
Jack "Duke" Brodisky	14
Joanne Scholzert	6
Kerry jones	4
Write-In	3
Undervote	4
County Chief Executive	
Norman Powers	13
Micheal Santarcangelo	7
Write-In	0
Undervote	0
County Controller	
Paul M. Bertel-Lincoln	12
Donna Berke	5
Write-In	1
Undervote	2
District Attorney	
Franklin Margo	9
Donald Hensley	9
Write-In	1
Undervote	1
School Director Region 6	
Gerald Danson	17
Shlomo Archibald	18
Write-In	2
Undervote	3
Commissioner Seat 3	
William Malicki	12
Arnold Wells	6
Write-In	1
Undervote	1
Statewide Referendum	
Yes	6
No	12
Undervote	2
Retention of Tony Grzanich	
Yes	14
No	6
Undervote	0
Retention of Debbie Marks	
Yes	10
No	10
Undervote	0
Cumulative Totals:	
Straight Party	
Republican	12
Democratic	9
Green	5

Libertarian	7
Undervote	47
President/Vice President of the United States	
James Collins	
Arthur Remus	44
Calvin Marino	
Keith Satterwhite	22
John P. Defazio	
Louis Denn	4
June Perkins	
David Heroux	7
Write-In	2
Undervote	1
United States Senator	
Colby Lincoln	42
Oscar Draper	27
Eric Sheely	6
Write-In	4
Undervote	1
Representative in Congress District 5	
Ben Baker	31
Barbara Barrett-Hicks	22
Write-In	4
Undervote	3
Representative in Congress District 10	
Lois Koss	14
William Sullivan	4
Write-In	1
Undervote	1
Governor/Lieutenant Governor	
Joe Carlton	
Arnold Krill	44
Charles Jasen	
Kenneth Interlicchio	25
Robert Marsh	
Theodore Kopp	5
Write-In	5
Undervote	1
Representative in the General Assembly District 83	
Harry Rider	19
R.J. Abbott	14
Derek Carlson	4
Write-In	3
Undervote	0
Representative in the General Assembly District 84	
Peter Valle	22
Neil Carey	15
Write-In	2
Undervote	1
Judge of Superior Court	
Robert L. Linkey	44
Patricia Smallmon	30
Write-In	4
Undervote	2
Judge of the Commonwealth Court	
Chris Carpenter	43
Eugene Ruff	28
Write-In	7
Undervote	2
Judge of the Court of Common Pleas	

Mary L. Daniel	42
Jack "Duke" Brodisky	40
Joanne Scholzert	31
Kerry Jones	25
Write-In	13
Undervote	9
County Chief Executive	
Norman Powers	44
Micheal Santarcangelo	29
Write-In	4
Undervote	3
County Controller	
Paul M. Bertel-Lincoln	42
Donna Berke	28
Write-In	3
Undervote	7
District Attorney	
Franklin Margo	31
Donald Hensley	43
Write-In	5
Undervote	1
School Director Region 6	
Gerald Danson	66
Shlomo Archibald	65
Write-In	16
Undervote	13
Commissioner Seat 1	
Stephen Harrick	13
George Fisk	6
Write-In	1
Undervote	0
Commissioner Seat 2	
Steve West	24
Tetty Rogiers	12
Write-In	2
Undervote	2
Commissioner Seat 3	
William Malicki	12
Arnold Wells	6
Write-In	1
Undervote	1
Statewide Referendum	
Yes	27
No	47
Undervote	6
Retention of Tony Grzanich	
Yes	54
No	22
Undervote	4
Retention of Debbie Marks	
Yes	49
No	27
Undervote	4

ATTACHMENT B
TEST CASES

TEST CASES
DS850 Central Scanner

Test Case Identifier: 02 – 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter	
PA ST 25 P.S. § 3031.7 Requirement:	(2) Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.
Test Objective: To determine if a voter has the ability to select candidates and questions.	Test Configuration: Central Scan tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open. The device is ready to accept ballots for scanning.
Step	Description
1000	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and vote selections can be made. <i>Actual:</i> The ballot was blank and vote selections could be made.
1010	Vote for the first candidate in the first partisan contest excluding a straight party contest. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil). <i>Expected:</i> The ballot indicates a vote selection for the first candidate in the first partisan contest excluding a straight party contest. <i>Actual:</i> The ballot indicated a vote selection for the first candidate in the first partisan contest excluding a straight party contest.
1020	On the first “N of M” contest, select the first “N” candidates in the contest. (e.g. in a Vote for Two contest the first two candidates would be selected) by appropriately marking the ballot. <i>Expected:</i> The ballot indicates a vote for the first “N” candidates in the first “N of M” contest. <i>Actual:</i> The ballot indicated a vote for the first “N” candidates in the first “N of M” contest.
1030	On the first “Question” contest, select the “Yes” option in the contest by appropriately marking the ballot. <i>Expected:</i> The ballot indicates a vote selection for the “Yes” option in the first “Question” contest. <i>Actual:</i> The ballot indicated a vote selection for the “Yes” option in the first “Question” contest.
1040	On the second “Question” contest, select the “No” option in the contest by appropriately marking the ballot. <i>Expected:</i> The ballot indicates a vote selection for the “No” option in the second “Question” contest. <i>Actual:</i> The ballot indicated a vote selection for the “No” option in the second “Question” contest.
1050	Review the ballot to verify that the above selections are marked.

	<p><i>Expected:</i> The correct selections are marked appropriately.</p> <p><i>Actual:</i> The correct selections were marked appropriately.</p>
1060	<p>Cast the ballot on the Central Scan tabulation device.</p> <p><i>Expected:</i> The ballot is cast successfully.</p> <p><i>Actual:</i> The ballot was cast successfully.</p>
1070	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1080	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester.</p>	

Test Case Identifier: 03 – 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method	
PA ST 25 P.S. § 3031.7 Requirements:	<i>(3) Permits each voter, at other than primary elections, to vote a straight political party ticket by one mark or act and, by one mark or act, to vote for all the candidates of one political party for presidential electors and, by one mark or act, to vote for all the candidates of one political party for every office to be voted for, and every such mark or act shall be equivalent to and shall be counted as a vote for every candidate of the political party so marked including its candidates for presidential electors, except with respect to those offices as to which the voter has registered a vote for individual candidates of the same or another political party or political body, in which case the automatic tabulating equipment shall credit the vote for that office only for the candidate individually so selected, notwithstanding the fact that the voter may not have individually voted for the full number of candidates for that office for which he was entitled to vote.</i>
Test Objective: To determine if the voting system supports straight party voting and the Pennsylvania Method.	Test Configuration: Central Scan tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for accepting ballots.
Step	Description
1000	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and vote selections can be made. <i>Actual:</i> The ballot was blank and vote selections could be made.
1010	Vote for the option for the first party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil). <i>Expected:</i> The ballot indicates a vote selection for the first party selection in the straight party contest. <i>Actual:</i> The ballot indicated a vote selection for the first party selection in the straight party contest.
1020	Review the ballot to verify that the above selection is marked. <i>Expected:</i> The correct selection is marked appropriately. <i>Actual:</i> The correct selection was marked appropriately.
1030	Cast the ballot on the Central Scan tabulation device. <i>Expected:</i> The ballot is cast successfully. <i>Actual:</i> The ballot was cast successfully.
1040	

	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1050	<p>Vote for the option for the second party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer's given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates a vote selection for the second party selection in the straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the second party selection in the straight party contest.</p>
1060	<p>Review the ballot to verify that the above selection is marked.</p> <p><i>Expected:</i> The correct selection is marked appropriately.</p> <p><i>Actual:</i> The correct selection was marked appropriately.</p>
1070	<p>On the first "N of M" contest, select the first partisan candidate that is not the party associated with the second straight party selection. Leave the remainder of the selections under voted.</p> <p><i>Expected:</i> The selected candidate should be the only selection marked.</p> <p><i>Actual:</i> The selected candidate was the only selection marked.</p>
1080	<p>Review the ballot to verify that the above selections are marked.</p> <p><i>Expected:</i> The correct selections are marked appropriately.</p> <p><i>Actual:</i> The correct selections were marked appropriately.</p>
1090	<p>Cast the ballot on the Central Scan tabulation device.</p> <p><i>Expected:</i> The ballot is cast successfully.</p> <p><i>Actual:</i> The ballot was cast successfully.</p>
1100	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1110	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p>

	<p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The process of selecting a candidate of the same party or of a different party of the straight party selection de-selects all candidates for the straight party vote.</p>	

Test Case Identifier: 04 – 25 P.S. § 3031.7(4) Straight Party and Write-In	
PA ST 25 P.S. § 3031.7 Requirements:	(4) Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.
Test Objective: To determine if the voting system supports straight party voting and write-in.	Test Configuration: Central Scan tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for ballot scanning.
Step	Description
1000	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and the vote selections can be made. <i>Actual:</i> The ballot was blank and the vote selections could be made.
1010	Vote for the option for the first party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil). <i>Expected:</i> The ballot indicates a vote selection for the first party selection in the straight party contest. <i>Actual:</i> The ballot indicated a vote selection for the first party selection in the straight party contest.
1020	Review the ballot to verify that the above selection is marked. <i>Expected:</i> The correct selection is marked appropriately. <i>Actual:</i> The correct selection was marked appropriately.
1030	Cast the ballot on the Central Scan tabulation device. <i>Expected:</i> The ballot is cast successfully. <i>Actual:</i> The ballot was cast successfully.
1040	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and the vote selections can be made. <i>Actual:</i> The ballot was blank and the vote selections could be made.
1050	Vote for the option for the first party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).

	<p><i>Expected:</i> The ballot indicates a vote selection for the first party selection in the straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the first party selection in the straight party contest.</p>
1060	<p>On the first partisan contest, mark the ballot to indicate a write-in and input John Doe as the write-in name.</p> <p><i>Expected:</i> The “Write-In” candidate John Doe appears.</p> <p><i>Actual:</i> The “Write-In” candidate John Doe appeared.</p>
1070	<p>Cast the ballot on the Central Scan tabulation device.</p> <p><i>Expected:</i> The ballot is cast successfully.</p> <p><i>Actual:</i> The ballot was cast successfully.</p>
1080	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and the vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and the vote selections could be made.</p>
1090	<p>Vote for the option for the first party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates a vote selection for the first party selection in the straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the first party selection in the straight party contest.</p>
1100	<p>On the first “Question” contest, mark both the “Yes” option and the “No” option (to over vote the ballot).</p> <p><i>Expected:</i> Both the “Yes” and “No” options are marked.</p> <p><i>Actual:</i> Both the “Yes” and “No” options were marked.</p>
1110	<p>Cast the ballot on the Central scan tabulation device.</p> <p><i>Expected:</i> The precinct tabulation device displays or provides an indication of an attempt to over vote. The precinct tabulation device might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The precinct tabulation device displayed or provided an indication of an attempt to over vote. The precinct tabulation device disallowed the selection and did not display any communication.</p>
1120	<p>Close the polls and print the closed polls report tape.</p>

	<p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1130	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a write-in candidate functions with a straight party selection.</p>	

Test Case Identifier: 05 – 25 P.S. § 3031.7(5) Selection of Candidate and Write-in	
PA ST 25 P.S. § 3031.7 Requirements:	(5) Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.
Test Objective: To determine if the voting system supports the selection of a candidate and a write-in candidate.	Test Configuration: Central Scan tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for ballot scanning.
Step	Description
1000	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1010	<p>Vote for the option for the first candidate in the first partisan contest. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates a vote selection for the first candidate selection in the first partisan contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the first candidate selection in the first partisan contest.</p>
1020	<p>Review the ballot to verify that the above selection is marked. Cast the ballot on the Central Scan tabulation device.</p> <p><i>Expected:</i> The correct selection is marked appropriately. The ballot is cast successfully.</p> <p><i>Actual:</i> The correct selection was marked appropriately. The ballot was cast successfully.</p>
1030	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1040	<p>Mark the option for a write-in candidate in the first partisan contest. Use the designed method to input “John Doe”.</p> <p><i>Expected:</i> A mark is made to indicate a vote selection for a write-in candidate with the name of “John Doe”.</p> <p><i>Actual:</i> A mark was made to indicate a vote selection for a write-in candidate with the name of “John Doe”.</p>
1050	Review the ballot, observing only the write-in candidate in the first partisan contest is marked. Use the designated

	<p>method to cast the voted ballot.</p> <p><i>Expected:</i> The ballot indicates the selection for only the write-in candidate “John Doe” in first partisan contests. After review, the ballot is cast successfully.</p> <p><i>Actual:</i> The ballot indicated the selection for only the write-in candidate “John Doe” in first partisan contests. After review, the ballot was cast successfully.</p>
1060	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1070	<p>Mark the option for a write-in candidate in the first “N of M” contest. Use the designed method to input “John Doe” for all selections.</p> <p><i>Expected:</i> The ballot indicates write-in’s of “John Doe”.</p> <p><i>Actual:</i> The ballot indicated write-in’s of “John Doe”.</p>
1080	<p>Cast the ballot on the Central Scan tabulation device.</p> <p><i>Expected:</i> The ballot is cast successfully.</p> <p><i>Actual:</i> The ballot was cast successfully.</p>
1090	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1100	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a candidate and a write-in candidate functions.</p>	

Test Case Identifier: 07– 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions	
PA ST 25 P.S. § 3031.7 Requirements:	(7) If it is of a type that registers the vote electronically, the voting system shall preclude each voter from voting for more persons for any office than he is entitled to vote for or upon any question more than once.
Test Objective: To determine if the voting device allows over voting on contests and questions	Test Configuration: Central scan tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for ballot scanning.
Step	Description
1000	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and vote selections can be made. <i>Actual:</i> The ballot was blank and vote selections could be made.
1010	Vote for the first candidate in the first partisan “1 of 1” contest excluding a straight party contest. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil). <i>Expected:</i> The ballot indicates a vote selection for the first candidate in the first partisan “1 of 1” contest excluding a straight party contest. <i>Actual:</i> The ballot indicated a vote selection for the first candidate in the first partisan “1 of 1” contest excluding a straight party contest.
1020	Vote for the second candidate in the first partisan “1 of 1” contest ensure the contest is the same contest as voted in step 1010. <i>Expected:</i> The ballot indicates a vote selection for the second candidate in the first partisan “1 of 1” contest excluding a straight party contest. <i>Actual:</i> The ballot indicated a vote selection for the second candidate in the first partisan “1 of 1” contest excluding a straight party contest.
1030	Attempt to cast the ballot on the Central Scan tabulation device. <i>Expected:</i> The ballot is rejected due to the over-vote condition. The central scan tabulation device displays or provides an indication of an attempt to over vote. <i>Actual:</i> The ballot was rejected due to the over-vote condition. The central scan tabulation device displayed or provided an indication of an attempt to over vote.
1040	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and vote selections can be made.

	<p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1050	<p>Vote for the first candidate in the first partisan “1 of 1” contest.</p> <p><i>Expected:</i> The ballot indicates a vote selection for the second candidate in the first partisan “1 of 1” contest excluding a straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the second candidate in the first partisan “1 of 1” contest excluding a straight party contest.</p>
1060	<p>Mark the write-in option for the same contest as in step 1050 and input the write-in “John Doe”.</p> <p><i>Expected:</i> The ballot indicates a vote selection for the write-in.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the write-in.</p>
1070	<p>Attempt to cast the ballot on the Central Scan tabulation device.</p> <p><i>Expected:</i> The ballot is rejected due to the over-vote condition. The central scan tabulation device displays or provides an indication of an attempt to over vote.</p> <p><i>Actual:</i> The ballot was rejected due to the over-vote condition. The central scan tabulation device displayed or provided an indication of an attempt to over vote.</p>
1080	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1090	<p>On to the first “N of M” contest, mark the first “N” candidates in the contest. (e.g. in a Vote for Two contest the first two candidates would be marked).</p> <p><i>Expected:</i> The ballot indicates a vote for the first “N” candidates in the first “N of M” contest.</p> <p><i>Actual:</i> The ballot indicated a vote for the first “N” candidates in the first “N of M” contest.</p>
1100	<p>Mark the “N +1” candidate in the first “N of M” contest. Ensure the contest is the same contest as voted in step 1090.</p> <p><i>Expected:</i> The ballot indicates a vote for the “N+1” candidate.</p> <p><i>Actual:</i> The ballot indicated a vote for the “N+1” candidate.</p>
1110	<p>Attempt to cast the ballot on the Central Scan tabulation device.</p>

	<p><i>Expected:</i> The ballot is rejected due to the over-vote condition. The central scan tabulation device displays or provides an indication of an attempt to over vote.</p> <p><i>Actual:</i> The ballot was rejected due to the over-vote condition. The central scan tabulation device displayed or provided an indication of an attempt to over vote.</p>
1120	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1130	<p>On the first “Question” contest, mark the “Yes” option in the contest.</p> <p><i>Expected:</i> The ballot indicates a vote for the “Yes” option in the first “Question” contest.</p> <p><i>Actual:</i> The ballot indicated a vote for the “Yes” option in the first “Question” contest.</p>
1140	<p>Mark the “No” option in the first “Question” contest ensure the contest is the same contest as voted in step 1130.</p> <p><i>Expected:</i> The ballot indicates a vote for the “No” option in the first “Question” contest.</p> <p><i>Actual:</i> The ballot indicated a vote for the “No” option in the first “Question” contest.</p>
1150	<p>Attempt to cast the ballot on the Central Scan tabulation device.</p> <p><i>Expected:</i> The ballot is rejected due to the over-vote condition. The central scan tabulation device displays or provides an indication of an attempt to over vote.</p> <p><i>Actual:</i> The ballot was rejected due to the over-vote condition. The central scan tabulation device displayed or provided an indication of an attempt to over vote.</p>
1160	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1170	<p>Review the closed polls report to ensure no votes are recorded and no ballots were scanned.</p> <p><i>Expected:</i> The closed polls report indicates zero totals.</p> <p><i>Actual:</i> The closed polls report indicated zero totals.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The attempts to select more persons than the vote for and any question more than once are unsuccessful.</p>	

Test Case Identifier: 17 – 25 P.S. § 3031.7(17) Public Counter, No Reopening of Polls, Media Security with Tamper Proof Locks and Zero Proof and Tally Reports.	
PA ST 25 P.S. § 3031.7 Requirements:	<p>(17) <i>If the voting system is of a type which provides for the computation and tabulation of all votes at a central counting center or if it provides for the tabulation of district totals at such a central counting center, the central automatic tabulating equipment shall include the following mechanisms or capabilities:</i></p> <p>(i) <i>It shall be constructed so that every person is precluded from tampering with the tabulating element during the course of its operation.</i></p> <p>(ii) <i>If the number of choices for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question.</i></p> <p>(iii) <i>It shall have a means by which to verify that the counters for each candidate position and for each question are all set to zero and shall be able to generate a printed record of each election district showing the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot. It may also be capable of generating cumulative election reports.</i></p>
Test Objective: To determine if the voting device has a public counter, does not allow the reopening of the polls, and supplies a zero proof and tally report.	Test Configuration: Optical Scan Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer. This includes all security locks and seals.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	The election media is installed but the polls have not been opened.
Step	Description
1000	<p>Ensure media is loaded but the polls have not been opened. Use the designated method to open polls. If a response is needed to print “Zero Proof” report, select this option.</p> <p><i>Expected:</i> The central tabulation device opens the polls and prints a “Zero Proof” report.</p> <p><i>Actual:</i> The central tabulation device creates sessions that are saved. The operator has the ability to clear all results and print a “Zero Proof” report.</p>
1010	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1020	<p>On the straight party contest, mark the first selection in the straight party contest.</p> <p><i>Expected:</i> The ballot indicates a vote selection for the first selection in the straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the first selection in the straight party contest.</p>
1030	<p>Proceed to the optical scan precinct tabulation device. Observe the public counter value being 0.</p>

	<p><i>Expected:</i> The optical scan precinct tabulation device's public counter is visible and the value is 0.</p> <p><i>Actual:</i> The optical scan precinct tabulation device's public counter was visible and the value was 0.</p>
1040	<p>Cast the ballot. Observe the acknowledgement of "successful" ballot cast, if provided. Observe the public counter incrementing by one.</p> <p><i>Expected:</i> The optical scan precinct tabulation device successfully cast the ballot and the public counter is incremented. If the ballot was not cast successfully the test is halted.</p> <p><i>Actual:</i> The optical scan precinct tabulation device successfully cast the ballot and the public counter was incremented.</p>
1050	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1060	<p>Use the designated method to attempt to reopen the polls.</p> <p><i>Expected:</i> The polls cannot be reopened.</p> <p><i>Actual:</i> The polls could not be reopened.</p>
1070	<p>Place lock on the optical scan precinct tabulation device per Pennsylvania Procedures to ensure all operation of the tabulation element is prevented.</p> <p><i>Expected:</i> The optical scan precinct tabulation device can be secured so that all operation of the tabulation element is prevented.</p> <p><i>Actual:</i> The optical scan precinct tabulation device could be secured so that all operation of the tabulation element was prevented.</p>
1070	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The voting device is able to produce a "Zero Proof" and "Tally Report". The voting device has a visible public counter and the counter increments correctly.</p>	

Test Case Identifier: Central Count Processing

Test Objective:

This test is designed to ensure a central count scanner to properly process a larger amount of ballots. The central counter scanner must have multi-feed protection, out stacking ability for ballots it is unable to process, and the ability to segregate ballots that require human intervention.

Test Configuration:

Central Scan tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.

Test Method:

An election definition will need to be created using the following requirements:

- 8 ½” X 14” ballot lengths
- 6 geographical subdivisions
- 1 split precinct
- 10 to 20 contests
- 10 candidates in 1 contests
- 1 “N of M” contest
- Actual names for candidates
- Support to outstack write-ins
- Support for Federal, State, and Local level offices

The test deck for this test will be created using the following formula:

- Number of ballots provided per precinct equal to $\sum_1^n x$ (where n is the number of options in the largest number contest on the ballot), plus two (to be left blank), plus one (to be overvoted) – this is applied per political party in a primary.
- Ballots marked such that the vote distribution in each contest is ascending order. For example, in a contest with 5 candidates and a write-in:
 - Position 1: 6 votes
 - Position 2: 5 votes
 - Position 3: 4 votes
 - Position 4: 3 votes
 - Position 5: 2 votes
 - Position 6 (write-in): 1 vote
- There should be two ballots in each precinct which are blank.
- There should be one overvoted ballot per precinct.

The test deck should be run to determined amount of times sufficient to determine the proper processing of the test deck. The actual number of times the test deck is to be run will be documented in the Test Protocol.

Criteria for Evaluation of the Test Results: All ballots are processed, recorded, stored, and reported as documented in the described test deck.

TEST CASE

Election Management System (EMS)

Test Case Identifier: Evaluation of Election Management System (EMS)	
PA ST 25 P.S. § 3031.7 Requirements:	<p>(2) Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.</p> <p>(3) Permits each voter, at other than primary elections, to vote a straight political party ticket by one mark or act and, by one mark or act, to vote for all the candidates of one political party for presidential electors and, by one mark or act, to vote for all the candidates of one political party for every office to be voted for, and every such mark or act shall be equivalent to and shall be counted as a vote for every candidate of the political party so marked including its candidates for presidential electors, except with respect to those offices as to which the voter has registered a vote for individual candidates of the same or another political party or political body, in which case the automatic tabulating equipment shall credit the vote for that office only for the candidate individually so selected, notwithstanding the fact that the voter may not have individually voted for the full number of candidates for that office for which he was entitled to vote.</p> <p>(4) Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.</p> <p>(5) Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.</p> <p>(6) Permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote and precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote.</p> <p>(9) Permits each voter at a primary election to vote only for the candidates seeking nomination by a political party in which such voter is registered and enrolled, and for any candidate for nonpartisan nomination, and for any question upon which he is entitled to vote.</p> <p>(11) Is suitably designed for the purpose used, is constructed in a neat and workmanlike manner of durable material of good quality, is safely and efficiently useable in the conduct of elections and, with respect to the counting of ballots cast at each district, is suitably designed and equipped to be capable of absolute accuracy, which accuracy shall be demonstrated to the Secretary of the Commonwealth.</p> <p>(12) Provides acceptable ballot security procedures and impoundment of ballots to prevent tampering with or substitution of any ballots or ballot cards</p> <p>(13) When properly operated, records correctly and computes and tabulates accurately every valid vote registered.</p>
Test Objective:	This test will focus on the ability of the election management system to support the requirements of PA ST 25 P.S. § 3031.7. The election functions being evaluated are: ballot layout and design; voting variation support; hardware programming; and accumulation and reporting of voted data.
Test Configuration:	The election management system will be configured as for pre-election ballot design and layout.
Test Method:	The method for testing these requirements is execution and inspection. The election management system will create elections containing specific voting variations, contests, and candidates required by PA ST 25 P.S. § 3031.7. In addition, an inspection will be performed on the product labeling of the election management system PC or laptop and the “hardening” of the OS and access controls to the PC or laptop.

Functional Testing:

The following election definition for a general election will be either input or observed by the examiner to ensure the election management system can support the Pennsylvania requirements:

Election Definition: Election Management General Election

General Election Description:

A general election containing a straight party contest, one partisan contest with write-in, one N of M contest, and one referendum contest in 1 precinct that contains two ballot styles. The voting variations are as follows:

- Partisan contest
- Non-Partisan contest
- N of M contest
- Referendum contest
- Straight Party voting
- Write-In voting

This general election is designed to functionally test the handling of multiple ballot styles and audio support. This election will only be input for the English language.

Configuration:

EMS computer, loaded with the software submitted for certification for use in Pennsylvania, to create the following configuration:

Name: EMS General Election

Voting Devices: All devices supported by the EMS

Precincts: Fire House Precinct

Parties: Democratic, Republican

Languages: English

Contests: 5

Contests as follows:

Fire House Precinct	
Straight Party	
Republican	
Democratic	
United States Senator	
Vote for One	
Colby Lincoln	
<i>Republican</i>	
Oscar Draper	
<i>Democratic</i>	
Write-In	
Judge of the Court of Common Pleas	
Vote for Not More Than Two	

Mary L. Daniel
Republican

Jack "Duke" Brodisky
Republican

Joanne Schollzert
Democratic

Kerry Jones
Democratic

Write-In

Write-In

County Commissioner
Vote for One

George Fisk

Steve West

Write-In

Statewide Referendum

Do you favor raising state sales tax to fund a new highway?

Yes

No

The following election definition for a primary election will be either input or observed by the examiner to ensure the election management system can support the Pennsylvania requirements:

Election Definition: Election Management Primary Election

Primary Election Description:

A primary election containing a contest with write-in, and one referendum contest in 1 precinct that contains two ballot styles. The voting variations are as follows:

- Partisan contest
- Referendum contest
- Write-In voting

This primary election was designed to functionally test the handling of multiple ballot styles and audio support. This election will only be input for the English language.

Configuration:

EMS computer loaded with the software submitted for certification for use in Pennsylvania to create the following configuration:

Name: EMS Primary Election
Voting Devices: All devices supported by the EMS
Precincts: Church Precinct
Parties: Democratic, Republican
Languages: English
Contests: 2
Contests as follows:

Church Precinct (DEM)	Church Precinct (REP)
United States Senator	United States Senator
Oscar Draper <i>Cumberland County</i>	Bob Ford <i>Allegheny County</i>
Carter McGaw <i>Philadelphia County</i>	Colby Lincoln <i>Delaware County</i>
Write-In	Write-In
Statewide Referendum Bond Issue	
Shall section two of chapter one hundred eighteen of the laws of nineteen hundred seventy-four authoring state debt be approved?	
Yes	
No	

Product Labeling:

Test steps for inspecting the election management systems for product labeling. The method for testing this requirement will be inspection. For COTS equipment, the examiner will examine the device for product labeling. This labeling is usually around the area of the power supply, the rear of the device, or on the bottom of the device. The examiner will inspect for the following product labels.

Conformité Européenne "European Conformity"	Underwriters Laboratories	Canadian Standards Association	Geprüfte Sicherheit "Tested Safety"
			

If the device contains any of these product labels the conformance claim should be accepted.

If the device does not contain any of these product labels, but does have product labeling the examiner will photographically document the labeling and research whether the conformance claim is self-declared or independently tested and to what standard.

If the conformance claim is independently tested to an industry accepted standard, the conformance claim should be accepted.

If the conformance claim is self-declared or not independently tested to an industry accepted standard, voting systems manufacturer will be asked to provide the data upon which the device manufacturer based their claim to the examiner for further review.

Physical and Access Controls:

Test steps will be followed to evaluate the physical and access controls and procedures in place for the election management system. This test will be performed by evaluating the system to ensure that all access areas and seals and/or locks provide adequate security from external access. The examiner will:

- check all seals and/or locks and attempt to open the system
- exercise verification of password security management

Criteria for Evaluation of the Test Results:

The election management system supports all requirements set forth in PA ST 25 P.S. § 3031.7

Comments: The EMS supports the creation and design of an election per PA ST 25 P.S § 3031.7

Examiner Approval: Jack Cobb Date: 09/10/2014

TEST CASES

DS200 Scanner

Test Case Identifier: 02 – 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter	
PA ST 25 P.S. § 3031.7 Requirement:	(2) Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.
Test Objective: To determine if a voter has the ability to select candidates and questions.	Test Configuration: Optical Scan precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open. The device is ready to accept ballots for scanning.
Step	Description
1000	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1010	<p>Vote for the first candidate in the first partisan contest excluding a straight party contest. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates a vote selection for the first candidate in the first partisan contest excluding a straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the first candidate in the first partisan contest excluding a straight party contest.</p>
1020	<p>On the first “N of M” contest, select the first “N” candidates in the contest. (e.g. in a Vote for Two contest the first two candidates would be selected) by appropriately marking the ballot.</p> <p><i>Expected:</i> The ballot indicates a vote for the first “N” candidates in the first “N of M” contest.</p> <p><i>Actual:</i> The ballot indicated a vote for the first “N” candidates in the first “N of M” contest.</p>
1030	<p>On the first “Question” contest, select the “Yes” option in the contest by appropriately marking the ballot.</p> <p><i>Expected:</i> The ballot indicates a vote selection for the “Yes” option in the first “Question” contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the “Yes” option in the first “Question” contest.</p>
1040	<p>On the second “Question” contest, select the “No” option in the contest by appropriately marking the ballot.</p> <p><i>Expected:</i> The ballot indicates a vote selection for the “No” option in the second “Question” contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the “No” option in the second “Question” contest.</p>

<p>1050</p>	<p>Review the ballot to verify that the above selections are marked.</p> <p><i>Expected:</i> The correct selections are marked appropriately.</p> <p><i>Actual:</i> The correct selections were marked appropriately.</p>
<p>1060</p>	<p>Cast the ballot on the Optical Scan precinct tabulation device.</p> <p><i>Expected:</i> The ballot is cast successfully.</p> <p><i>Actual:</i> The ballot was cast successfully.</p>
<p>1070</p>	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
<p>1080</p>	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester.</p>	

Test Case Identifier: 03 – 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method-	
PA ST 25 P.S. § 3031.7 Requirements:	(3) Permits each voter, at other than primary elections, to vote a straight political party ticket by one mark or act and, by one mark or act, to vote for all the candidates of one political party for presidential electors and, by one mark or act, to vote for all the candidates of one political party for every office to be voted for, and every such mark or act shall be equivalent to and shall be counted as a vote for every candidate of the political party so marked including its candidates for presidential electors, except with respect to those offices as to which the voter has registered a vote for individual candidates of the same or another political party or political body, in which case the automatic tabulating equipment shall credit the vote for that office only for the candidate individually so selected, notwithstanding the fact that the voter may not have individually voted for the full number of candidates for that office for which he was entitled to vote.
Test Objective: To determine if the voting system supports straight party voting and the Pennsylvania Method.	Test Configuration: Optical Scan Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for accepting ballots.
Step	Description
1000	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and vote selections can be made. <i>Actual:</i> The ballot was blank and vote selections could be made.
1010	Vote for the option for the first party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil). <i>Expected:</i> The ballot indicates a vote selection for the first party selection in the straight party contest. <i>Actual:</i> The ballot indicated a vote selection for the first party selection in the straight party contest.
1020	Review the ballot to verify that the above selection is marked. <i>Expected:</i> The correct selection is marked appropriately. <i>Actual:</i> The correct selection is marked appropriately.
1030	Cast the ballot on the Optical Scan precinct tabulation device. <i>Expected:</i> The ballot is cast successfully. <i>Actual:</i> The ballot was cast successfully.
1040	Obtain a blank ballot.

	<p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1050	<p>Vote for the option for the second party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates a vote selection for the second party selection in the straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the second party selection in the straight party contest.</p>
1060	<p>Review the ballot to verify that the above selection is marked.</p> <p><i>Expected:</i> The correct selection is marked appropriately.</p> <p><i>Actual:</i> The correct selection was marked appropriately.</p>
1070	<p>On the first “N of M” contest, select the first partisan candidate that is not the party associated with the second straight party selection. Leave the remainder of the selections under voted.</p> <p><i>Expected:</i> The selected candidate should be the only selection marked.</p> <p><i>Actual:</i> The selected candidate was the only selection marked.</p>
1080	<p>Review the ballot to verify that the above selections are marked.</p> <p><i>Expected:</i> The correct selections are marked appropriately.</p> <p><i>Actual:</i> The correct selections were marked appropriately.</p>
1090	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1100	<p>Vote for the option for the first party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates a vote selection for the first party selection in the straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the first party selection in the straight party contest.</p>
1110	

	<p>On the first “N of M” contest, select the first partisan candidate that is associated with the first straight party selection. Leave the remainder of the selections under voted.</p> <p>Expected: The selected candidate should be the only selection marked.</p> <p>Actual: The selected candidate was the only selection marked.</p>
1120	<p>Review the ballot to verify that the above selections are marked.</p> <p>Expected: The correct selections are marked appropriately.</p> <p>Actual: The correct selections were marked appropriately.</p>
1130	<p>Cast the ballot on the Optical Scan precinct tabulation device.</p> <p><i>Expected:</i> The ballot is cast successfully.</p> <p><i>Actual:</i> The ballot was cast successfully.</p>
1140	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1150	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p>Expected: The closed polls report presents the accumulated totals for the selections input above.</p> <p>Actual: The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The process of selecting a candidate of the same party or of a different party of the straight party selection de-selects all candidates for the straight party vote.</p>	

Test Case Identifier: 04 – 25 P.S. § 3031.7(4) Straight Party and Write-In	
PA ST 25 P.S. § 3031.7 Requirements:	<i>(4) Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.</i>
Test Objective: To determine if the voting system supports straight party voting and write-in.	Test Configuration: Optical Scan Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.
Step	Description
1000	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and the vote selections can be made. <i>Actual:</i> The ballot was blank and the vote selections could be made.
1010	Vote for the option for the first party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil). <i>Expected:</i> The ballot indicates a vote selection for the first party selection in the straight party contest. <i>Actual:</i> The ballot indicated a vote selection for the first party selection in the straight party contest.
1020	Review the ballot to verify that the above selection is marked. <i>Expected:</i> The correct selection is marked appropriately. <i>Actual:</i> The correct selection was marked appropriately.
1030	Cast the ballot on the Optical Scan precinct tabulation device. <i>Expected:</i> The ballot is cast successfully. <i>Actual:</i> The ballot was cast successfully.
1040	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and the vote selections can be made. <i>Actual:</i> The ballot was blank and the vote selections could be made.
1050	Vote for the option for the first party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an

	<p>appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates a vote selection for the first party selection in the straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the first party selection in the straight party contest.</p>
1060	<p>On the first partisan contest, mark the ballot to indicate a write-in and input John Doe as the write-in name.</p> <p><i>Expected:</i> The “Write-In” candidate John Doe appears.</p> <p><i>Actual:</i> The “Write-In” candidate John Doe appeared.</p>
1070	<p>Cast the ballot on the Optical Scan precinct tabulation device.</p> <p><i>Expected:</i> The ballot is cast successfully.</p> <p><i>Actual:</i> The ballot was cast successfully.</p>
1080	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and the vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and the vote selections could be made.</p>
1090	<p>Vote for the option for the first party selection of the straight party. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates a vote selection for the first party selection in the straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the first party selection in the straight party contest.</p>
1100	<p>On the first “Question” contest, mark both the “Yes” option and the “No” option (to over vote the ballot).</p> <p><i>Expected:</i> Both the “Yes” and “No” options are marked.</p> <p><i>Actual:</i> Both the “Yes” and “No” options were marked.</p>
1110	<p>Cast the ballot on the optical scan tabulation device.</p> <p><i>Expected:</i> The precinct tabulation device displays or provides an indication of an attempt to over vote. The precinct tabulation device might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The precinct tabulation device displayed or provided an indication of an attempt to over vote. The precinct tabulation device disallowed the selection and did not display any communication.</p>

<p>1120</p>	<p>Close the polls and print the closed polls report tape.</p> <p>Expected: The polls closed and a report is printed.</p> <p>Actual: The polls closed and a report was printed.</p>
<p>1130</p>	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p>Expected: The closed polls report presents the accumulated totals for the selections input above.</p> <p>Actual: The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a write-in candidate functions with a straight party selection.</p>	

Test Case Identifier: 05 – 25 P.S. § 3031.7(5) Selection of Candidate and Write-in	
PA ST 25 P.S. § 3031.7 Requirements:	<i>(5) Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.</i>
Test Objective: To determine if the voting system supports the selection of a candidate and a write-in candidate.	Test Configuration: Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.
Step	Description
1000	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1010	<p>Vote for the option for the first candidate in the first partisan contest. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates a vote selection for the first candidate selection in the first partisan contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the first candidate selection in the first partisan contest.</p>
1020	<p>Review the ballot to verify that the above selection is marked. Cast the ballot on the Optical Scan precinct tabulation device.</p> <p><i>Expected:</i> The correct selection is marked appropriately. The ballot is cast successfully.</p> <p><i>Actual:</i> The correct selection was marked appropriately. The ballot was cast successfully.</p>
1030	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1040	<p>Mark the option for a write-in candidate in the first partisan contest. Use the designed method to input “John Doe”.</p> <p><i>Expected:</i> A mark is made to indicate a vote selection for a write-in candidate with the name of “John Doe”.</p> <p><i>Actual:</i> A mark was made to indicate a vote selection for a write-in candidate with the name of “John Doe”.</p>

<p>1050</p>	<p>Review the ballot, observing only the write-in candidate in the first partisan contest is marked. Use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The ballot indicates the selection for only the write-in candidate “John Doe” in first partisan contests. After review, the ballot is cast successfully.</p> <p><i>Actual:</i> The ballot indicated the selection for only the write-in candidate “John Doe” in first partisan contests. After review, the ballot was cast successfully.</p>
<p>1060</p>	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
<p>1070</p>	<p>Mark the option for a write-in candidate in the first “N of M” contest. Use the designated method to input “John Doe” for all selections.</p> <p><i>Expected:</i> The ballot indicates write-in’s of “John Doe”.</p> <p><i>Actual:</i> The ballot indicated write-in’s of “John Doe”.</p>
<p>1080</p>	<p>Cast the ballot on the Optical Scan precinct tabulation device.</p> <p><i>Expected:</i> The ballot is cast successfully.</p> <p><i>Actual:</i> The ballot was cast successfully.</p>
<p>1090</p>	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
<p>1100</p>	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a candidate and a write-in candidate functions.</p>	

Test Case Identifier: 07– 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions	
PA ST 25 P.S. § 3031.7 Requirements:	(7) If it is of a type that registers the vote electronically, the voting system shall preclude each voter from voting for more persons for any office than he is entitled to vote for or upon any question more than once.
Test Objective: To determine if the voting device allows over voting on contests and questions	Test Configuration: Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.
Step	Description
1000	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and vote selections can be made. <i>Actual:</i> The ballot was blank and vote selections could be made.
1010	Vote for the first candidate in the first partisan “1 of 1” contest excluding a straight party contest. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil). <i>Expected:</i> The ballot indicates a vote selection for the first candidate in the first partisan “1 of 1” contest excluding a straight party contest. <i>Actual:</i> The ballot indicated a vote selection for the first candidate in the first partisan “1 of 1” contest excluding a straight party contest.
1020	Vote for the second candidate in the first partisan “1 of 1” contest ensure the contest is the same contest as voted in step 1010. <i>Expected:</i> The ballot indicates a vote selection for the second candidate in the first partisan “1 of 1” contest excluding a straight party contest. <i>Actual:</i> The ballot indicated a vote selection for the second candidate in the first partisan “1 of 1” contest excluding a straight party contest.
1030	Attempt to cast the ballot on the Optical Scan precinct tabulation device. <i>Expected:</i> The ballot is rejected due to the over-vote condition. The precinct tabulation device displays or provides an indication of an attempt to over vote. <i>Actual:</i> The ballot was rejected due to the over-vote condition. The precinct tabulation device displayed or provided an indication of an attempt to over vote.
1040	Obtain a blank ballot. <i>Expected:</i> The ballot is blank and vote selections can be made.

	<i>Actual:</i> The ballot was blank and vote selections could be made.
1050	<p>Vote for the first candidate in the first partisan “1 of 1” contest.</p> <p><i>Expected:</i> The ballot indicates a vote selection for the second candidate in the first partisan “1 of 1” contest excluding a straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the second candidate in the first partisan “1 of 1” contest excluding a straight party contest.</p>
1060	<p>Mark the write-in option for the same contest as in step 1050 and input the write-in “John Doe”.</p> <p><i>Expected:</i> The ballot indicates a vote selection for the write-in.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the write-in.</p>
1070	<p>Attempt to cast the ballot on the Optical Scan precinct tabulation device.</p> <p><i>Expected:</i> The ballot is rejected due to the over-vote condition. The precinct tabulation device displays or provides an indication of an attempt to over vote.</p> <p><i>Actual:</i> The ballot was rejected due to the over-vote condition. The precinct tabulation device displays or provides an indication of an attempt to over vote.</p>
1080	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1090	<p>On to the first “N of M” contest, mark the first “N” candidates in the contest. (e.g. in a Vote for Two contest the first two candidates would be marked).</p> <p><i>Expected:</i> The ballot indicates a vote for the first “N” candidates in the first “N of M” contest.</p> <p><i>Actual:</i> The ballot indicated a vote for the first “N” candidates in the first “N of M” contest.</p>
1100	<p>Mark the “N +1” candidate in the first “N of M” contest. Ensure the contest is the same contest as voted in step 1090.</p> <p><i>Expected:</i> The ballot indicates a vote for the “N+1” candidate.</p> <p><i>Actual:</i> The ballot indicated a vote for the “N+1” candidate.</p>
1110	<p>Attempt to cast the ballot on the Optical Scan precinct tabulation device.</p>

	<p><i>Expected:</i> The ballot is rejected due to the over-vote condition. The precinct tabulation device displays or provides an indication of an attempt to over vote.</p> <p><i>Actual:</i> The ballot was rejected due to the over-vote condition. The precinct tabulation device displayed or provided an indication of an attempt to over vote.</p>
1120	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1130	<p>On the first “Question” contest, mark the “Yes” option in the contest.</p> <p><i>Expected:</i> The ballot indicates a vote for the “Yes” option in the first “Question” contest.</p> <p><i>Actual:</i> The ballot indicated a vote for the “Yes” option in the first “Question” contest.</p>
1140	<p>Mark the “No” option in the first “Question” contest. Ensure the contest is the same contest as voted in step 1130.</p> <p><i>Expected:</i> The ballot indicates a vote for the “No” option in the first “Question” contest.</p> <p><i>Actual:</i> The ballot indicated a vote for the “No” option in the first “Question” contest.</p>
1150	<p>Attempt to cast the ballot on the Optical Scan precinct tabulation device.</p> <p><i>Expected:</i> The ballot is rejected due to the over-vote condition. The precinct tabulation device displays or provides an indication of an attempt to over vote.</p> <p><i>Actual:</i> The ballot was rejected due to the over-vote condition. The precinct tabulation device displayed or provided an indication of an attempt to over vote.</p>
1160	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1170	<p>Review the closed polls report to ensure no votes are recorded and no ballots were scanned.</p> <p><i>Expected:</i> The closed polls report indicates zero totals.</p> <p><i>Actual:</i> The closed polls report indicated zero totals.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The attempts to select more persons than the vote for and any question more than once are unsuccessful.</p>	

Test Case Identifier: 10 – 25 P.S. § 3031.7(10) Ballot Review and Change	
PA ST 25 P.S. § 3031.7 Requirements:	(10) If it is of a type that registers the vote electronically, the voting system shall permit each voter to change his vote for any candidate or upon any question appearing on the official ballot up to the time that he takes the final step to register his vote and to have his vote computed. If it is of a type that uses paper ballots or ballot cards to register the vote and automatic tabulating equipment to compute such votes, the system shall provide that a voter who spoils his ballot may obtain another ballot; any ballot thus returned shall be immediately cancelled and at the close of the polls shall be enclosed in an envelope marked "Spoiled" which shall be sealed and returned to the county board.
Test Objective: To determine if the voting device allows the voter to review the selections and change a vote selection before cast of the ballot.	Test Configuration: Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.
Step	Description
1000	Obtain a ballot for voting <i>Expected:</i> The ballot is blank and vote selections can be made. <i>Actual:</i> The ballot was blank and vote selections could be made.
1010	Vote for the first candidate in the first all "1 of 1" contest excluding a straight party contest, the first "N" candidates in all "N of M" contests, and select the "Yes" option in all "Question" contests. The ballot must be marked in such a way as to meet the manufacturer's given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil). <i>Expected:</i> The ballot indicates selections as described above. <i>Actual:</i> The ballot indicated selections as described above.
1020	Cast the ballot on the optical scan precinct tabulation device. <i>Expected:</i> The ballot is cast successfully. <i>Actual:</i> The ballot was cast successfully.
1030	Obtain a ballot for voting <i>Expected:</i> The ballot is blank and vote selections can be made. <i>Actual:</i> The ballot was blank and vote selections could be made.

<p>1040</p>	<p>Vote for the first candidate in the first all “1 of 1” contest excluding a straight party contest, the first “N” candidates in all “N of M” contests, and select the “Yes” option in all “Question” contests. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates selections as described above.</p> <p><i>Actual:</i> The ballot indicated selections as described above.</p>
<p>1050</p>	<p>Using the designated method, spoil the ballot.</p> <p><i>Expected:</i> The ballot is successfully spoiled and placed in the appropriate envelope.</p> <p><i>Actual:</i> The ballot was successfully spoiled and placed in the appropriate envelope.</p>
<p>1070</p>	<p>Obtain a ballot for voting to replace the ballot spoiled in Step 1050.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p> <p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
<p>1080</p>	<p>Vote for the first candidate in the first all “1 of 1” contest excluding a straight party contest, the first “N” candidates in all “N of M” contests, and select the “No” option in all “Question” contests. The ballot must be marked in such a way as to meet the manufacturer’s given criteria for a mark (for example, the oval must be completely filled in with an appropriate marking utensil).</p> <p><i>Expected:</i> The ballot indicates selections as described above.</p> <p><i>Actual:</i> The ballot indicated selections as described above.</p>
<p>1090</p>	<p>Cast the ballot on the optical scan precinct tabulation device.</p> <p><i>Expected:</i> The ballot is cast successfully.</p> <p><i>Actual:</i> The ballot was cast successfully.</p>
<p>1100</p>	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
<p>1090</p>	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly. The results should indicate two votes for the first candidate in the first all “1 of 1” contest excluding a straight party contest, two votes for the first “N” candidates in all “N of M” contests, and one vote for the “Yes” option and one vote for “No” option in all “Question” contests.</p>

	<p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The voter input can be changed by navigating through the ballot after a ballot has been reviewed.</p>	

Test Case Identifier: 16 – 25 P.S. § 3031.7(16) Public Counter, No Reopening of Polls, Media Security with Tamper Proof Locks and Zero Proof and Tally Reports.	
PA ST 25 P.S. § 3031.7 Requirements:	<p>(16) If the voting system is of a type which provides for the computation and tabulation of votes at the district level, the district component of the automatic tabulating equipment shall include the following mechanisms or capabilities:</p> <p>(i) A public counter, the register of which is visible from the outside of the automatic tabulating equipment component into which the ballots are entered, which shall show during any period of operation the total number of ballots entered for computation and tabulation.</p> <p>(ii) A lock, or locks, by the use of which all operation of the tabulation element of the automatic tabulating equipment is absolutely prevented immediately after the polls are closed or where the tabulation of votes is completed.</p> <p>(iii) It shall be so constructed and controlled that, during the progress of voting, it shall preclude every person from seeing or knowing the number of votes theretofore registered for any candidate or question; and it shall preclude every person from tampering with the tabulating element.</p> <p>(iv) If the number of choices recorded for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question, provided, that if used during the period of voting it may also have the capacity to indicate to a voter that he has improperly voted for more candidates for any office than he is entitled to vote for, and in such case it shall have the capacity to permit the voter to mark a new ballot or to forego his opportunity to make such correction.</p> <p>(v) It shall be equipped with an element which generates a printed record at the beginning of its operation which verifies that the tabulating elements for each candidate position and each question and the public counter are all set to zero and with an element which generates a printed record at the finish of its operation of the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot.</p>
Test Objective: To determine if the voting device has a public counter, does not allow the reopening of the polls, and supplies a zero proof and tally report.	Test Configuration: Optical Scan Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer. This includes all security locks and seals.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	The election media is installed but the polls have not been opened.
Step	Description
1000	<p>Ensure media is loaded but the polls have not been opened. Use the designated method to open polls. If a response is needed to print “Zero Proof” report, select this option.</p> <p><i>Expected:</i> The optical scan precinct tabulation device opens the polls and prints a “Zero Proof” report.</p> <p><i>Actual:</i> The optical scan precinct tabulation device opened the polls and printed a “Zero Proof” report.</p>
1010	<p>Obtain a blank ballot.</p> <p><i>Expected:</i> The ballot is blank and vote selections can be made.</p>

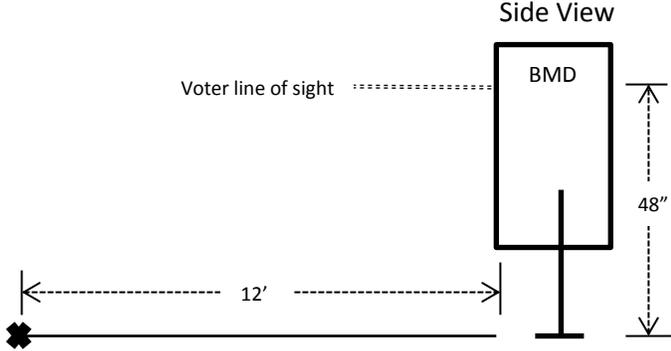
	<p><i>Actual:</i> The ballot was blank and vote selections could be made.</p>
1020	<p>On the straight party contest, mark the first selection in the straight party contest.</p> <p><i>Expected:</i> The ballot indicates a vote selection for the first selection in the straight party contest.</p> <p><i>Actual:</i> The ballot indicated a vote selection for the first selection in the straight party contest.</p>
1030	<p>Proceed to the optical scan precinct tabulation device. Observe the public counter value being 0.</p> <p><i>Expected:</i> The optical scan precinct tabulation device's public counter is visible and the value is 0.</p> <p><i>Actual:</i> The optical scan precinct tabulation device's public counter was visible and the value was 0.</p>
1040	<p>Cast the ballot. Observe the acknowledgement of "successful" ballot cast, if provided. Observe the public counter incrementing by one.</p> <p><i>Expected:</i> The optical scan precinct tabulation device successfully cast the ballot and the public counter is incremented. If the ballot was not cast successfully the test is halted.</p> <p><i>Actual:</i> The optical scan precinct tabulation device successfully cast the ballot and the public counter was incremented. If the ballot was not cast successfully the test was halted.</p>
1050	<p>Close the polls and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1060	<p>Use the designated method to attempt to reopen the polls.</p> <p><i>Expected:</i> The polls cannot be reopened.</p> <p><i>Actual:</i> The polls could not be reopened.</p>
1070	<p>Place lock on the optical scan precinct tabulation device per Pennsylvania Procedures to ensure all operation of the tabulation element is prevented.</p> <p><i>Expected:</i> The optical scan precinct tabulation device can be secured so that all operation of the tabulation element is prevented.</p> <p><i>Actual:</i> The optical scan precinct tabulation device could be secured so that all operation of the tabulation element was prevented.</p>
1070	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p>

	<p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The voting device is able to produce a “Zero Proof” and “Tally Report”. The voting device has a visible public counter and the counter increments correctly.</p>	

TEST CASES

AutoMARK

Test Case Identifier: 01 – 25 P.S. § 3031.7(1) Voter Secrecy (ADA Voter)	
PA ST 25 P.S. § 3031.7 Requirement:	<i>(1) Provides for voting in absolute secrecy and prevents any person from seeing or knowing for whom any voter, except one who has received or is receiving assistance as prescribed by law, has voted or is voting.</i>
Test Objective: To determine if a voter's selections input using an ADA device can be observed during the act of voting, or once a vote has been cast.	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device are configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer for an ADA voter. A marker is placed 12 feet (measured from the lowest point of the devices voting surface to the floor) directly behind the center of the BMD and the precinct tabulation device. From that marker, another marker is placed 12 feet to the right side and the left side. The side distance observation points should be approximately 17 feet. See Step 1000 for a layout diagram. The ADA voter will be positioned in the center of the BMD and the precinct tabulation device with a site line of 4 feet. See Step 1001.
Test Equipment:	Standard 15+ foot tape measure
Special Procedural Requirements:	Two roles are required for this test case: an ADA Voter role and an Observer role. The ADA voter will be positioned with a line of site at 48 inches. The observation must be made by an individual between the heights of 68 inches and 71 inches.
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	<p>Layout Diagram:</p> <p style="text-align: center;">Top View</p> <p style="text-align: center;">BMD</p> <p style="text-align: center;">12'</p> <p style="text-align: center;">~17' ~17'</p> <p style="text-align: center;">12' 12'</p> <p>Verify all measurements.</p> <p><i>Expected:</i> Center measurement is 12 feet and the side distance observation points are approximately 17 feet.</p> <p><i>Actual:</i> Center measurement was 12 feet and the side distance observation points were approximately 17 feet.</p>
1001	ADA Voter Position:

	<p style="text-align: center;">Side View</p>  <p>Verify all measurements.</p> <p><i>Expected:</i> Center measurement is 12 feet and the side distance observation points are approximately 17 feet with a voter line of sight at 48 inches.</p> <p><i>Actual:</i> Center measurement was 12 feet and the side distance observation points were approximately 17 feet with a voter line of sight at 48 inches.</p>
<p>1010</p>	<p>Observer Role - Activate a ballot for ADA voting.</p> <p><i>Expected:</i> Ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> Ballot was presented and vote selections could be input</p>
<p>1020</p>	<p>ADA Voter Role - Select the candidate corresponding to the upper most left hand position of the ballot presentation.</p> <p>Observer Role - Attempt to ascertain, both audibly and visually, the ADA Voter's input from the right most position, the center position, and the left most position.</p> <p>ADA Voter Role - Use the supplied method to advance the ballot to a vote marked state. The only selection should be the upper most left hand position. All other selections are to be under voted.</p> <p><i>Expected:</i> The Observer cannot determine the ADA Voter's input selections.</p> <p><i>Actual:</i> The Observer could not determine the ADA Voter's input selections.</p>
<p>1030</p>	<p>ADA Voter Role - Select the candidate corresponding to the upper most right hand position of the ballot presentation.</p> <p>Observer Role - Attempt to ascertain, both audibly and visually, the ADA Voter's input from the right most position, the center position, and the left most position.</p> <p>ADA Voter Role - Use the supplied method to advance the ballot to a vote marked state. The only selection</p>

	<p>should be the upper most right hand position. All other selections are to be under voted.</p> <p><i>Expected:</i> The Observer cannot determine the ADA Voter's input selections.</p> <p><i>Actual:</i> The Observer could not determine the ADA Voter's input selections.</p>
1040	<p>ADA Voter Role - Select the candidate corresponding to the lower most left hand position of the ballot presentation.</p> <p>Observer Role - Attempt to ascertain, both audibly and visually, the ADA Voter's input from the right most position, the center position, and the left most position.</p> <p>ADA Voter Role - Use the supplied method to advance the ballot to a vote marked state. The only selection should be the lower most left hand position. All other selections are to be under voted.</p> <p><i>Expected:</i> The Observer cannot determine the ADA Voter's input selections.</p> <p><i>Actual:</i> The Observer could not determine the ADA Voter's input selections.</p>
1050	<p>ADA Voter Role - Select the candidate corresponding to the lower most right hand position of the ballot presentation.</p> <p>Observer Role - Attempt to ascertain, both audibly and visually, the ADA Voter's input from the right most position, the center position, and the left most position.</p> <p>ADA Voter Role - Use the supplied method to advance the ballot to a vote marked state. The only selection should be the lower most right hand position. All other selections are to be under voted. After the ballot has been accepted, cast the ballot on the precinct tabulation device.</p> <p><i>Expected:</i> The Observer cannot determine the ADA Voter's input selections.</p> <p><i>Actual:</i> The Observer could not determine the ADA Voter's input selections.</p>
<p>Criteria for Evaluation of the Test Results: The observer must not be able to determine the Voter's selection from any observation position or any Voter selection surface position.</p>	

Test Case Identifier: 02 – 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)	
PA ST 25 P.S. § 3031.7 Requirement:	(2) Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.
Test Objective: To determine if a voter has the ability to select candidates and questions.	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device are configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.
Step	Description
1000	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1010	<p>Select the first candidate in the first partisan contest excluding a straight party contest.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first candidate in the first partisan contest excluding a straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first candidate in the first partisan contest excluding a straight party contest.</p>
1020	<p>Use the designated method to advance the ballot to the first “N of M” contest. Select the first “N” candidates in the contest. (e.g. in a Vote for Two contest the first two candidates would be selected).</p> <p><i>Expected:</i> The BMD advances to the first “N of M” contest. Once selected the BMD displays or provides an indication of a vote for the first “N” candidates in the first “N of M” contest.</p> <p><i>Actual:</i> The BMD advanced to the first “N of M” contest. Once selected, the BMD displayed or provided an indication of a vote for the first “N” candidates in the first “N of M” contest.</p>
1030	<p>Use the designated method to advance the ballot to the first “Question” contest. Select the “Yes” option in the contest.</p> <p><i>Expected:</i> The BMD advances to the first “Question” contest. Once selected, the BMD displays or provides an indication of a vote selection for the “Yes” option in the first “Question” contest.</p> <p><i>Actual:</i> The BMD advanced to the first “Question” contest. Once selected, the BMD displayed or provided an indication of a vote selection for the “Yes” option in the first “Question” contest.</p>
1040	<p>Use the designated method to advance the ballot to the second “Question” contest. Select the “No” option in the</p>

	<p>contest.</p> <p><i>Expected:</i> The BMD advances to the second “Question” contest. Once selected, the BMD displays or provides an indication of a vote selection for the “No” option in the second “Question” contest.</p> <p><i>Actual:</i> The BMD advanced to the second “Question” contest. Once selected, the BMD displayed or provided an indication of a vote selection for the “No” option in the second “Question” contest.</p>
1050	<p>Use the designated method to advance the “Ballot Review”. Observe the “Ballot Review” to see if the above selections are displayed. Use the designated method to accept the marked ballot. Then, on the precinct tabulation device, cast the voted selections.</p> <p><i>Expected:</i> The BMD advances to the “Ballot Review” screen. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD advanced to the “Ballot Review” screen. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
1060	<p>Repeat steps 1000- 1050 from above using an ADA input device.</p> <p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____</p> <p><i>Actual:</i> All steps repeated correctly.</p>
1070	<p>Disable voting on the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The BMD is not a tabulator and the polls can’t be closed and there is no report to be printed.</p>
1080	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> No report to be printed.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester.</p>	

Test Case Identifier: 03 – 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method	
PA ST 25 P.S. § 3031.7 Requirements:	(3) Permits each voter, at other than primary elections, to vote a straight political party ticket by one mark or act and, by one mark or act, to vote for all the candidates of one political party for presidential electors and, by one mark or act, to vote for all the candidates of one political party for every office to be voted for, and every such mark or act shall be equivalent to and shall be counted as a vote for every candidate of the political party so marked including its candidates for presidential electors, except with respect to those offices as to which the voter has registered a vote for individual candidates of the same or another political party or political body, in which case the automatic tabulating equipment shall credit the vote for that office only for the candidate individually so selected, notwithstanding the fact that the voter may not have individually voted for the full number of candidates for that office for which he was entitled to vote.
Test Objective: To determine if the voting system supports straight party voting and the Pennsylvania Method.	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	On the BMD, activate a ballot for voting. <i>Expected:</i> The ballot is presented and vote selections can be input. <i>Actual:</i> The ballot was presented and vote selections could be input.
1010	Select the option for the first party selection of the straight party. <i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first party selection in the straight party contest. <i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first party selection in the straight party contest.
1020	Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for the indication of a voter selection for all partisan candidates associated with the first straight party selection. <i>Expected:</i> The BMD displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection. <i>Actual:</i> The BMD displayed or provided an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection.
1030	Use the designated method to advance through the remainder of the ballots advancing to the ballot review screen. Observe the selection in the ballot review observing only the partisan contests associated with the first straight party selections are present. Use the designated method to accept and mark the ballot. Then, on the precinct

	<p>tabulating device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for only the partisan contests associated with the first straight party selection. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for only the partisan contests associated with the first straight party selection. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
1040	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1050	<p>Select the option for the second party selection of the straight party.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the second party in the straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the second party in the straight party contest.</p>
1060	<p>Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for an indication of a voter selection for all partisan candidates associated with the second straight party selection.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the second straight party selection.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for all the partisan candidates in each contest associated with the second straight party selection.</p>
1070	<p>Use the designated method to retreat through the ballot selections to the first “N of M” contest. Select the first partisan candidate that is not the party associated with the second straight party selection. Leave the remainder of the selections under voted.</p> <p><i>Expected:</i> “N” candidates for the party of the second straight party selections should display or provide an indication of the non-selection. The selected candidate should be the only selection displayed or indicated.</p> <p><i>Actual:</i> “N” candidates for the party of the second straight party selections displayed or provided an indication of the non-selection. The selected candidate was the only selection displayed or indicated.</p>
1080	<p>Use the designated method to retreat through the ballot to the “Straight Party” contest. Observe the selection for the second straight party selection.</p> <p><i>Expected:</i> The second straight party selections should be displayed or an indication given as selected.</p>

	<i>Actual:</i> The second straight party selections displayed or gave indication as selected
1090	<p>Use the designated method to advance through the ballot to the second “N of M” contest. Select the first partisan candidate that is not the party associated with the second straight party selection. Leave the remainder of the selections under voted.</p> <p><i>Expected:</i> “N” candidates for the party of the second straight party selections should display or provide an indication of the non-selection. The selected candidate should be the only selection displayed or indicated.</p> <p><i>Actual:</i> “N” candidates for the party of the second straight party selections displayed or provided an indication of the non-selection. The selected candidate was the only selection displayed or indicated.</p>
1100	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review. Review the selections in the ballot review to verify that the partisan contests associated with the second straight party selections are present with the exception of the “N of M” contests. Use the designated method to accept and mark the ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or indicates the selection for the partisan contests associated with the second straight party selection for all contests except the first “N of M” contest. The first “N of M” contest displays or indicates the selection of the first candidate that is not associated with the second straight party selection. After review, the ballot is accepted. The ballot is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or indicated the selection for the partisan contests associated with the second straight party selection for all contests except the first “N of M” contest. The first “N of M” contest displayed or indicated the selection of the first candidate that was not associated with the second straight party selection. After review, the ballot was accepted. The ballot was then cast successfully on the precinct tabulation device.</p>
1110	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1120	<p>Select the option for the first party selection of the straight party.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first party in the straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first party in the straight party contest.</p>
1130	<p>Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for an indication of a voter selection for all partisan candidates associated with the first straight party selection.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for all the partisan candidates in each</p>

	<p>contest associated with the first straight party selection.</p>
1140	<p>Use the designated method to retreat through the ballot selections to the first “N of M” contest. Select the first partisan candidate that is associated with the first straight party selection. Leave this contest and the remainder of the selections under voted.</p> <p><i>Expected:</i> “N” candidates for the party of the first straight party selections should display or provide an indication of the non-selection. The selected candidate should be the only selection displayed or indicated.</p> <p><i>Actual:</i> “N” candidates for the party of the first straight party selections displayed or provide an indication of the non-selection. The selected candidate was the only selection displayed or indicated.</p>
1150	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review. Review the selections in the ballot review to verify that the partisan contests associated with the first straight party selections are present with the exception of the first “N of M” contest. Use the designated method to accept the marked ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or indicates the selection for the partisan contests associated with the first straight party selection for all contests except the first “N of M” contest. The first “N of M” contest displays or indicates the selection of the second candidate that is associated with the first straight party selection and an under vote. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or indicated the selection for the partisan contests associated with the first straight party selection for all contests except the first “N of M” contest. The first “N of M” contest displayed or indicated the selection of the second candidate that was associated with the first straight party selection and an under vote. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
1160	<p>Repeat steps 1000- 1090 from above using an ADA input device.</p> <p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____ Repeat 1060 _____ Repeat 1070 _____ Repeat 1080 _____ Repeat 1090 _____</p> <p><i>Actual:</i> All steps were repeated correctly.</p>
1170	<p>Disable voting on the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls are closed and a report is printed.</p> <p><i>Actual:</i> The polls were closed and a report was printed.</p>

<p>1180</p>	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a candidate of the same party or of a different party of the straight party selection de-selects all candidates for the straight party vote.</p>	

Test Case Identifier: 04 – 25 P.S. § 3031.7(4) Straight Party and Write-In	
PA ST 25 P.S. § 3031.7 Requirements:	<i>(4) Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.</i>
Test Objective: To determine if the voting system supports straight party voting and write-in.	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device are configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	<p>On the BMD, activate a ballot for voting</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input</p>
1010	<p>Select the option for the first party selection of the straight party.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first party selection in the straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first party selection in the straight party contest.</p>
1020	<p>Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for a display or indication of a voter selection for all partisan candidates associated with the first straight party selection.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection.</p>
1030	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review observing only the partisan contests associated with the first straight party selections are present. Use the designated method to accept and mark the ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or provides an indication of the selection for only the partisan contests associated with the first straight party selection. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of the selection for only the partisan contests associated with the first straight party selection. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>

<p>1040</p>	<p>On the BMD, activate a ballot for regular voting</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
<p>1050</p>	<p>Select the option for the first party selection of the straight party.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection associated with the first party selection in the straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection associated with the first party selection in the straight party contest.</p>
<p>1060</p>	<p>Use the designated method to advance to the first partisan contest. Select the write-in option. Input John Doe as the write-in name.</p> <p><i>Expected:</i> The BMD advances to the first partisan contest and allows the input of the “Write-In” candidate John Doe.</p> <p><i>Actual:</i> The BMD advanced to the first partisan contest and allowed the input of the “Write-In” candidate John Doe.</p>
<p>1070</p>	<p>Use the designated method to advance to the ballot review screen. Observe the selections associated with the first straight party selection with the exception of the first partisan contest. Use the designated method to accept and mark the ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection associated with the first party selection in the straight party contest with the exception of the first partisan contest which should indicate the write-in input of John Doe. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection associated with the first party selection in the straight party contest with the exception of the first partisan contest which indicated the write-in input of John Doe. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
<p>1080</p>	<p>On the BMD, activate a ballot for regular voting</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
<p>1090</p>	<p>Select the option for the first party selection of the straight party.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection associated with the first party selection in the straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection associated with the first party selection</p>

	in the straight party contest.
1100	<p>Use the designated method to advance to the first “Question” contest. Select the “Yes” option. Attempt to over vote by selecting the “No” option. Observe the action of attempting to select the second option.</p> <p><i>Expected:</i> The BMD displays or provides an indication of an attempt to over vote. The precinct tabulation device might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of an attempt to over vote. The precinct tabulation device disallowed the selection and did not display any communication.</p>
1110	<p>Use the designated method to advance to the ballot review screen. Observe the selections associated with the first straight party selection and “Yes” on the first “Question” contest (unless the device toggled, then “No”). Use the designated method to accept and mark the ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection associated with the first party selection and “Yes” on the first “Question” contest. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection associated with the first party selection and “Yes” on the first “Question” contest. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
1120	<p>Repeat steps 1000- 1090 from above using an ADA input device.</p> <p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____ Repeat 1060 _____ Repeat 1070 _____ Repeat 1080 _____ Repeat 1090 _____</p> <p><i>Actual:</i> All steps were repeated correctly.</p>
1120	<p>Disable voting on the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1130	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p>

	<i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.
Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a write-in candidate functions with a straight party selection.	

Test Case Identifier: 05 – 25 P.S. § 3031.7(5) Selection of Candidate and Write-in	
PA ST 25 P.S. § 3031.7 Requirements:	<i>(5) Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.</i>
Test Objective: To determine if the voting system supports the selection of a candidate and a write-in candidate.	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device are configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1010	<p>Select the option for the first candidate in the first partisan contest.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first candidate selection in the first partisan contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first candidate selection in the first partisan contest.</p>
1020	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review, observing only the first candidate in the first partisan contest is selected. Use the designated method to accept the marked ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or provides an indication of the selection for only the first candidate selection in first partisan contests. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of the selection for only the first candidate selection in first partisan contests. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
1030	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1040	<p>Select the option for a write-in candidate in the first partisan contest. Use the designed method to input “John Doe”.</p>

	<p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for a write-in candidate.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for a write-in candidate.</p>
1050	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review observing only the write-in candidate in the first partisan contest is selected. Use the designated method to accept the marked ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The precinct tabulation device displays or provides an indication of the selection for only the write-in candidate “John Doe” in first partisan contests. After review, the ballot is cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The precinct tabulation device displayed or provided an indication of the selection for only the write-in candidate “John Doe” in first partisan contests. After review, the ballot was cast successfully on the precinct tabulation device.</p>
1060	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1070	<p>Select the option for a write-in candidate in the first “N of M” contest. Use the designed method to input “John Doe” for all selections. Observe any activity to preclude the same input.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a duplicate vote selection for a write-in candidate. If no indication is provided, then trace the ability to adjudicate the vote through the entire system. It may require the EMS component to verify.</p> <p><i>Actual:</i> Adjudication is required in the EMS.</p>
1080	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review observing only the write-in candidates in the first “N of M” contest are selected. Use the designated method to accept the marked ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The precinct tabulation device displays or provides an indication of the selection for only the write-in candidates “John Doe” in first “N of M” contests. After review, the ballot is cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The precinct tabulation device displayed or provided an indication of the selection for only the write-in candidates “John Doe” in first “N of M” contests. After review, the ballot was cast successfully on the precinct tabulation device.</p>
1090	<p>Repeat steps 1000- 1050 from above using an ADA input device.</p>

	<p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____</p> <p><i>Actual:</i> The steps were repeated correctly.</p>
1100	<p>Disable voting on the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1100	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a candidate and a write-in candidate functions.</p>	

Test Case Identifier: 07– 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)	
PA ST 25 P.S. § 3031.7 Requirements:	(7) If it is of a type that registers the vote electronically, the voting system shall preclude each voter from voting for more persons for any office than he is entitled to vote for or upon any question more than once.
Test Objective: To determine if the voting system allows over voting on contests and questions	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1010	<p>Select the first candidate in the first partisan “1 of 1” contest excluding a straight party contest.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first candidate in the first partisan “1 of 1” contest excluding a straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first candidate in the first partisan “1 of 1” contest excluding a straight party contest.</p>
1020	<p>Attempt to select the second candidate in the first partisan “1 of 1” contest ensure the contest is the same contest as voted in step 1010. Observe the action of attempting to place a second vote.</p> <p><i>Expected:</i> The BMD displays or provides an indication of an attempt to over vote. The BMD might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of an attempt to over vote.</p>
1030	<p>Attempt to select the write-in option. Observe the action of attempting to input a write-in.</p> <p><i>Expected:</i> The BMD displays or provides an indication of an attempt to over vote. The BMD might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of an attempt to over vote.</p>
1040	<p>Use the designated method to advance the ballot to the first “N of M” contest. Select the first “N” candidates in the contest. (e.g. in a Vote for Two contest the first two candidates would be selected).</p> <p><i>Expected:</i> The BMD advances to the first “N of M” contest. Once selected, the BMD displays or provides an indication of a vote for the first “N” candidates in the first “N of M” contest.</p> <p><i>Actual:</i> The BMD advanced to the first “N of M” contest. Once selected, the BMD displayed or provided an</p>

	<p>indication of a vote for the first “N” candidates in the first “N of M” contest.</p>
1050	<p>Attempt to select the “N +1” candidate in the first “N of M” contest ensure the contest is the same contest as voted in step 1030. Observe the action of attempting to place an over vote.</p> <p><i>Expected:</i> The BMD displays or provides an indication of an attempt to over vote. The BMD might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of an attempt to over vote.</p>
1060	<p>Use the designated method to advance the ballot to the first “Question” contest. Select the “Yes” option in the contest.</p> <p><i>Expected:</i> The BMD advances to the first “Question” contest. Once selected, the BMD displays or provides an indication of a vote for the “Yes” option in the first “Question” contest.</p> <p><i>Actual:</i> The BMD advanced to the first “Question” contest. Once selected, the BMD displayed or provided an indication of a vote for the “Yes” option in the first “Question” contest.</p>
1070	<p>Attempt to select the “No” option in the first “Question” contest ensure the contest is the same contest as voted in step 1050. Observe the action of attempting to place an over vote.</p> <p><i>Expected:</i> The BMD displays or provides an indication of an attempt to over vote. The BMD might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of an attempt to over vote.</p>
1080	<p>Use the designated method to advance the “Ballot Review”. Observe the “Ballot Review” to see if the above selections are indicated. Use the designated method to mark the voted selections onto the paper ballot. Use the designated mark to cast the marked ballot on the precinct tabulation device.</p> <p><i>Expected:</i> The ballot marking device advances to the “Ballot Review” screen and marks the selections. After review, the ballot is cast successfully.</p> <p><i>Actual:</i> The ballot marking device advanced to the “Ballot Review” screen and marked the selections. After review, the ballot was cast successfully.</p>
1090	<p>Repeat steps 1000- 1070 from above using an ADA input device.</p> <p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____ Repeat 1060 _____ Repeat 1070 _____</p> <p><i>Actual:</i> The steps were repeated correctly.</p>

<p>1100</p>	<p>Disable the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
<p>1110</p>	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The attempts to select more persons than the vote for and any question more than once are unsuccessful.</p>	

Test Case Identifier: 10 – 25 P.S. § 3031.7(10) Ballot Review and Change (RegularADA)	
PA ST 25 P.S. § 3031.7 Requirements:	(10) If it is of a type that registers the vote electronically, the voting system shall permit each voter to change his vote for any candidate or upon any question appearing on the official ballot up to the time that he takes the final step to register his vote and to have his vote computed. If it is of a type that uses paper ballots or ballot cards to register the vote and automatic tabulating equipment to compute such votes, the system shall provide that a voter who spoils his ballot may obtain another ballot; any ballot thus returned shall be immediately cancelled and at the close of the polls shall be enclosed in an envelope marked "Spoiled" which shall be sealed and returned to the county board.
Test Objective: To determine if the voting system allows the voter to review the selections and change a vote selection before cast of the ballot.	Test Configuration: Ballot Marking Device (BDM) and precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	On the BMD, activate a ballot for voting. <i>Expected:</i> The ballot is presented and vote selections can be input. <i>Actual:</i> The ballot was presented and vote selections could be input.
1010	Select the first candidate in the first all "1 of 1" contest excluding a straight party contest, the first "N" candidates in all "N of M" contests, and select the "Yes" option in all "Question" contests. <i>Expected:</i> The BMD allows for the navigation and the voting inputs to be selected as described above. <i>Actual:</i> The BMD allowed for the navigation and the voting inputs to be selected as described above.
1020	Use the designated method to advance the "Ballot Review". Observe the "Ballot Review" to see if the above selections are indicated. <i>Expected:</i> The BMD advances to the "Ballot Review" screen. The vote selections can be verified. <i>Actual:</i> The BMD advanced to the "Ballot Review" screen. The vote selections could be verified.
1030	Use the designated method to retract to the first partisan "1 of 1" contest excluding the straight party contest.. <i>Expected:</i> The BMD navigates to the first partisan "1 of 1" contest excluding the straight party contest. <i>Actual:</i> The BMD navigated to the first partisan "1 of 1" contest excluding the straight party contest.
1040	Deselect the first candidate selection and select the second candidate. <i>Expected:</i> The BMD indicates the de-selection of the first candidate and the selection of the second candidate.

	<p><i>Actual:</i> The BMD indicated the de-selection of the first candidate and the selection of the second candidate.</p>
1050	<p>Use the designated method to advance to the first “Question” contest. De-select the “Yes” option and select the “No” option.</p> <p><i>Expected:</i> The BMD navigates to the first “Question” contest and provides an indication of the de-selection of the “Yes” option and a selection of the “No” option.</p> <p><i>Actual:</i> The BMD navigated to the first “Question” contest and provided an indication of the de-selection of the “Yes” option and a selection of the “No” option.</p>
1060	<p>Use the designated method to advance the “Ballot Review”. Observe the “Ballot Review” to see if the above selections are indicated. Use the designated method accept and mark the ballot. Then, on the precinct tabulation device, use the designated method to cast the voted selections.</p> <p><i>Expected:</i> The BMD advances to the “Ballot Review” screen. After review, the ballot is accepted and is then cast successfully.</p> <p><i>Actual:</i> The BMD advanced to the “Ballot Review” screen. After review, the ballot was accepted and was then cast successfully.</p>
1070	<p>Repeat steps 1000- 1060 from above using an ADA input device.</p> <p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____ Repeat 1060 _____</p> <p><i>Actual:</i> All steps were repeated correctly.</p>
1080	<p>Disable voting on the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1090	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The voter input can be changed by navigating through the ballot after a ballot has been reviewed.</p>	

TEST CASES

ExpressVote

Test Case Identifier: 01 – 25 P.S. § 3031.7(1) Voter Secrecy (ADA Voter)	
PA ST 25 P.S. § 3031.7 Requirement:	<i>(1) Provides for voting in absolute secrecy and prevents any person from seeing or knowing for whom any voter, except one who has received or is receiving assistance as prescribed by law, has voted or is voting.</i>
Test Objective: To determine if a voter's selections input using an ADA device can be observed during the act of voting, or once a vote has been cast.	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device are configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer for an ADA voter. A marker is placed 12 feet (measured from the lowest point of the devices voting surface to the floor) directly behind the center of the BMD and the precinct tabulation device. From that marker, another marker is placed 12 feet to the right side and the left side. The side distance observation points should be approximately 17 feet. See Step 1000 for a layout diagram. The ADA voter will be positioned in the center of the BMD and the precinct tabulation device with a site line of 4 feet. See Step 1001.
Test Equipment:	Standard 15+ foot tape measure
Special Procedural Requirements:	Two roles are required for this test case: an ADA Voter role and an Observer role. The ADA voter will be positioned with a line of site at 48 inches. The observation must be made by an individual between the heights of 68 inches and 71 inches.
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	<p>Layout Diagram:</p> <p style="text-align: center;">Top View</p> <p style="text-align: center;">BMD</p> <p style="text-align: center;">~17' 12' ~17'</p> <p style="text-align: center;">12' 12'</p> <p>Verify all measurements.</p> <p><i>Expected:</i> Center measurement is 12 feet and the side distance observation points are approximately 17 feet.</p> <p><i>Actual:</i> Center measurement was 12 feet and the side distance observation points were approximately 17 feet.</p>
1001	ADA Voter Position:

	<div style="text-align: center;"> <p style="text-align: center;">Side View</p> <p style="text-align: center;">Voter line of sight</p> <p style="text-align: center;">BMD</p> <p style="text-align: center;">12'</p> <p style="text-align: center;">48"</p> </div> <p>Verify all measurements.</p> <p><i>Expected:</i> Center measurement is 12 feet and the side distance observation points are approximately 17 feet with a voter line of sight at 48 inches.</p> <p><i>Actual:</i> Center measurement was 12 feet and the side distance observation points were approximately 17 feet with a voter line of sight at 48 inches.</p>
<p>1010</p>	<p>Observer Role - Activate a ballot for ADA voting.</p> <p><i>Expected:</i> Ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> Ballot was presented and vote selections could be input.</p>
<p>1020</p>	<p>ADA Voter Role - Select the candidate corresponding to the upper most left hand position of the ballot presentation.</p> <p>Observer Role - Attempt to ascertain, both audibly and visually, the ADA Voter's input from the right most position, the center position, and the left most position.</p> <p>ADA Voter Role - Use the supplied method to advance the ballot to a vote marked state. The only selection should be the upper most left hand position. All other selections are to be under voted.</p> <p><i>Expected:</i> The Observer cannot determine the ADA Voter's input selections.</p> <p><i>Actual:</i> The Observer could not determine the ADA Voter's input selections.</p>
<p>1030</p>	<p>ADA Voter Role - Select the candidate corresponding to the upper most right hand position of the ballot presentation.</p> <p>Observer Role - Attempt to ascertain, both audibly and visually, the ADA Voter's input from the right most</p>

	<p>position, the center position, and the left most position.</p> <p>ADA Voter Role - Use the supplied method to advance the ballot to a vote marked state. The only selection should be the upper most right hand position. All other selections are to be under voted.</p> <p><i>Expected:</i> The Observer cannot determine the ADA Voter's input selections.</p> <p><i>Actual:</i> The Observer could not determine the ADA Voter's input selections.</p>
<p>1040</p>	<p>ADA Voter Role - Select the candidate corresponding to the lower most left hand position of the ballot presentation.</p> <p>Observer Role - Attempt to ascertain, both audibly and visually, the ADA Voter's input from the right most position, the center position, and the left most position.</p> <p>ADA Voter Role - Use the supplied method to advance the ballot to a vote marked state. The only selection should be the lower most left hand position. All other selections are to be under voted.</p> <p><i>Expected:</i> The Observer cannot determine the ADA Voter's input selections.</p> <p><i>Actual:</i> The Observer could not determine the ADA Voter's input selections.</p>
<p>1050</p>	<p>ADA Voter Role - Select the candidate corresponding to the lower most right hand position of the ballot presentation.</p> <p>Observer Role - Attempt to ascertain, both audibly and visually, the ADA Voter's input from the right most position, the center position, and the left most position.</p> <p>ADA Voter Role - Use the supplied method to advance the ballot to a vote marked state. The only selection should be the lower most right hand position. All other selections are to be under voted. After the ballot has been accepted, cast the ballot on the precinct tabulation device.</p> <p><i>Expected:</i> The Observer cannot determine the ADA Voter's input selections.</p> <p><i>Actual:</i> The Observer could not determine the ADA Voter's input selections.</p>
<p>Criteria for Evaluation of the Test Results: The observer must not be able to determine the Voter's selection from any observation position or any Voter selection surface position.</p>	

Test Case Identifier: 02 – 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)	
PA ST 25 P.S. § 3031.7 Requirement:	(2) Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.
Test Objective: To determine if a voter has the ability to select candidates and questions.	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device are configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.
Step	Description
1000	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1010	<p>Select the first candidate in the first partisan contest excluding a straight party contest.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first candidate in the first partisan contest excluding a straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first candidate in the first partisan contest excluding a straight party contest.</p>
1020	<p>Use the designated method to advance the ballot to the first “N of M” contest. Select the first “N” candidates in the contest. (e.g. in a Vote for Two contest the first two candidates would be selected).</p> <p><i>Expected:</i> The BMD advances to the first “N of M” contest. Once selected, the BMD displays or provides an indication of a vote for the first “N” candidates in the first “N of M” contest.</p> <p><i>Actual:</i> The BMD advanced to the first “N of M” contest. Once selected, the BMD displayed or provided an indication of a vote for the first “N” candidates in the first “N of M” contest.</p>
1030	<p>Use the designated method to advance the ballot to the first “Question” contest. Select the “Yes” option in the contest.</p> <p><i>Expected:</i> The BMD advances to the first “Question” contest. Once selected, the BMD displays or provides an indication of a vote selection for the “Yes” option in the first “Question” contest.</p> <p><i>Actual:</i> The BMD advanced to the first “Question” contest. Once selected, the BMD displayed or provided an indication of a vote selection for the “Yes” option in the first “Question” contest.</p>
1040	<p>Use the designated method to advance the ballot to the second “Question” contest. Select the “No” option in the contest.</p> <p><i>Expected:</i> The BMD advances to the second “Question” contest. Once selected, the BMD displays or provides</p>

	<p>an indication of a vote selection for the “No” option in the second “Question” contest.</p> <p><i>Actual:</i> The BMD advanced to the second “Question” contest. Once selected, the BMD displayed or provided an indication of a vote selection for the “No” option in the second “Question” contest.</p>
1050	<p>Use the designated method to advance the “Ballot Review”. Observe the “Ballot Review” to see if the above selections are displayed. Use the designated method to accept the marked ballot. Then, on the precinct tabulation device, cast the voted selections.</p> <p><i>Expected:</i> The BMD advances to the “Ballot Review” screen. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD advanced to the “Ballot Review” screen. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
1060	<p>Repeat steps 1000- 1050 from above using an ADA input device.</p> <p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____</p> <p><i>Actual:</i> All steps were repeated correctly.</p>
1070	<p>Disable voting on the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1080	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester.</p>	

Test Case Identifier: 03 – 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method	
PA ST 25 P.S. § 3031.7 Requirements:	<i>(3) Permits each voter, at other than primary elections, to vote a straight political party ticket by one mark or act and, by one mark or act, to vote for all the candidates of one political party for presidential electors and, by one mark or act, to vote for all the candidates of one political party for every office to be voted for, and every such mark or act shall be equivalent to and shall be counted as a vote for every candidate of the political party so marked including its candidates for presidential electors, except with respect to those offices as to which the voter has registered a vote for individual candidates of the same or another political party or political body, in which case the automatic tabulating equipment shall credit the vote for that office only for the candidate individually so selected, notwithstanding the fact that the voter may not have individually voted for the full number of candidates for that office for which he was entitled to vote.</i>
Test Objective: To determine if the voting system supports straight party voting and the Pennsylvania Method.	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	On the BMD, activate a ballot for voting. <i>Expected:</i> The ballot is presented and vote selections can be input. <i>Actual:</i> The ballot was presented and vote selections could be input.
1010	Select the option for the first party selection of the straight party. <i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first party selection in the straight party contest. <i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first party selection in the straight party contest.
1020	Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for the indication of a voter selection for all partisan candidates associated with the first straight party selection. <i>Expected:</i> The BMD displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection. <i>Actual:</i> The BMD displayed or provided an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection.
1030	Use the designated method to advance through the remainder of the ballots advancing to the ballot review screen. Observe the selection in the ballot review observing only the partisan contests associated with the first straight party selections are present. Use the designated method to accept and mark the ballot. Then, on the precinct

	<p>tabulating device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for only the partisan contests associated with the first straight party selection. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for only the partisan contests associated with the first straight party selection. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
1040	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1050	<p>Select the option for the second party selection of the straight party.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the second party in the straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the second party in the straight party contest.</p>
1060	<p>Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for an indication of a voter selection for all partisan candidates associated with the second straight party selection.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the second straight party selection.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for all the partisan candidates in each contest associated with the second straight party selection.</p>
1070	<p>Use the designated method to retreat through the ballot selections to the first “N of M” contest. Select the first partisan candidate that is not the party associated with the second straight party selection. Leave the remainder of the selections under voted.</p> <p><i>Expected:</i> “N” candidates for the party of the second straight party selections should display or provide an indication of the non-selection. The selected candidate should be the only selection displayed or indicated.</p> <p><i>Actual:</i> “N” candidates for the party of the second straight party selections displayed or provided an indication of the non-selection. The selected candidate was the only selection displayed or indicated.</p>
1080	<p>Use the designated method to retreat through the ballot to the “Straight Party” contest. Observe the selection for the second straight party selection.</p> <p><i>Expected:</i> The second straight party selections should be displayed or an indication given as selected.</p>

	<i>Actual:</i> The second straight party selections were displayed or an indication was given as selected
1090	<p>Use the designated method to advance through the ballot to the second “N of M” contest. Select the first partisan candidate that is not the party associated with the second straight party selection. Leave the remainder of the selections under voted.</p> <p><i>Expected:</i> “N” candidates for the party of the second straight party selections should display or provide an indication of the non-selection. The selected candidate should be the only selection displayed or indicated.</p> <p><i>Actual:</i> “N” candidates for the party of the second straight party selections displayed or provided an indication of the non-selection. The selected candidate was the only selection displayed or indicated.</p>
1100	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review. Review the selections in the ballot review to verify that the partisan contests associated with the second straight party selections are present with the exception of the “N of M” contests. Use the designated method to accept and mark the ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or indicates the selection for the partisan contests associated with the second straight party selection for all contests except the first “N of M” contest. The first “N of M” contest displays or indicates the selection of the first candidate that is not associated with the second straight party selection. After review, the ballot is accepted. The ballot is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or indicated the selection for the partisan contests associated with the second straight party selection for all contests except the first “N of M” contest. The first “N of M” contest displayed or indicated the selection of the first candidate that is not associated with the second straight party selection. After review, the ballot was accepted. The ballot was then cast successfully on the precinct tabulation device.</p>
1110	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1120	<p>Select the option for the first party selection of the straight party.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first party in the straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first party in the straight party contest.</p>
1130	<p>Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for an indication of a voter selection for all partisan candidates associated with the first straight party selection.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection.</p>

<p>1140</p>	<p>Use the designated method to retreat through the ballot selections to the first “N of M” contest. Select the first partisan candidate that is associated with the first straight party selection. Leave this contest and the remainder of the selections under voted.</p> <p><i>Expected:</i> “N” candidates for the party of the first straight party selections should display or provide an indication of the non-selection. The selected candidate should be the only selection displayed or indicated.</p> <p><i>Actual:</i> “N” candidates for the party of the first straight party selections displayed or provided an indication of the non-selection. The selected candidate was the only selection displayed or indicated.</p>
<p>1150</p>	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review. Review the selections in the ballot review to verify that the partisan contests associated with the first straight party selections are present with the exception of the first “N of M” contest. Use the designated method to accept the marked ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or indicates the selection for the partisan contests associated with the first straight party selection for all contests except the first “N of M” contest. The first “N of M” contest displays or indicates the selection of the second candidate that is associated with the first straight party selection and an under vote. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or indicated the selection for the partisan contests associated with the first straight party selection for all contests except the first “N of M” contest. The first “N of M” contest displayed or indicated the selection of the second candidate that is associated with the first straight party selection and an under vote. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
<p>1160</p>	<p>Repeat steps 1000- 1090 from above using an ADA input device.</p> <p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____ Repeat 1060 _____ Repeat 1070 _____ Repeat 1080 _____ Repeat 1090 _____</p> <p><i>Actual:</i> The steps were repeated correctly.</p>
<p>1170</p>	<p>Disable voting on the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls are closed and a report is printed.</p> <p><i>Actual:</i> The polls were closed and a report was printed.</p>
<p>1180</p>	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p>

	<p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a candidate of the same party or of a different party of the straight party selection de-selects all candidates for the straight party vote.</p>	

Test Case Identifier: 04 – 25 P.S. § 3031.7(4) Straight Party and Write-In	
PA ST 25 P.S. § 3031.7 Requirements:	<i>(4) Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.</i>
Test Objective: To determine if the voting system supports straight party voting and write-in.	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device are configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	<p>On the BMD, activate a ballot for voting</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1010	<p>Select the option for the first party selection of the straight party.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first party selection in the straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first party selection in the straight party contest.</p>
1020	<p>Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for a display or indication of a voter selection for all partisan candidates associated with the first straight party selection.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection.</p>
1030	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review observing only the partisan contests associated with the first straight party selections are present. Use the designated method to accept and mark the ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or provides an indication of the selection for only the partisan contests associated with the first straight party selection. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of the selection for only the partisan contests associated with the first straight party selection. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>

<p>1040</p>	<p>On the BMD, activate a ballot for regular voting</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
<p>1050</p>	<p>Select the option for the first party selection of the straight party.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection associated with the first party selection in the straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection associated with the first party selection in the straight party contest.</p>
<p>1060</p>	<p>Use the designated method to advance to the first partisan contest. Select the write-in option. Input John Doe as the write-in name.</p> <p><i>Expected:</i> The BMD advances to the first partisan contest and allows the input of the “Write-In” candidate John Doe.</p> <p><i>Actual:</i> The BMD advanced to the first partisan contest and allowed the input of the “Write-In” candidate John Doe.</p>
<p>1070</p>	<p>Use the designated method to advance to the ballot review screen. Observe the selections associated with the first straight party selection with the exception of the first partisan contest. Use the designated method to accept and mark the ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection associated with the first party selection in the straight party contest with the exception of the first partisan contest which should indicate the write-in input of John Doe. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection associated with the first party selection in the straight party contest with the exception of the first partisan contest which indicated the write-in input of John Doe. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
<p>1080</p>	<p>On the BMD, activate a ballot for regular voting</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
<p>1090</p>	<p>Select the option for the first party selection of the straight party.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection associated with the first party selection in the straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection associated with the first party selection in the straight party contest.</p>

<p>1100</p>	<p>Use the designated method to advance to the first “Question” contest. Select the “Yes” option. Attempt to over vote by selecting the “No” option. Observe the action of attempting to select the second option.</p> <p><i>Expected:</i> The BMD displays or provides an indication of an attempt to over vote. The precinct tabulation device might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of an attempt to over vote.</p>
<p>1110</p>	<p>Use the designated method to advance to the ballot review screen. Observe the selections associated with the first straight party selection and “Yes” on the first “Question” contest (unless the device toggled, then “No”). Use the designated method to accept and mark the ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection associated with the first party selection and “Yes” on the first “Question” contest. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection associated with the first party selection and “Yes” on the first “Question” contest. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
<p>1120</p>	<p>Repeat steps 1000- 1090 from above using an ADA input device.</p> <p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____ Repeat 1060 _____ Repeat 1070 _____ Repeat 1080 _____ Repeat 1090 _____</p> <p><i>Actual:</i> All steps were repeated correctly.</p>
<p>1120</p>	<p>Disable voting on the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
<p>1130</p>	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>

Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a write-in candidate functions with a straight party selection.

Test Case Identifier: 05 – 25 P.S. § 3031.7(5) Selection of Candidate and Write-in	
PA ST 25 P.S. § 3031.7 Requirements:	<i>(5) Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.</i>
Test Objective: To determine if the voting system supports the selection of a candidate and a write-in candidate.	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device are configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1010	<p>Select the option for the first candidate in the first partisan contest.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first candidate selection in the first partisan contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first candidate selection in the first partisan contest.</p>
1020	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review, observing only the first candidate in the first partisan contest is selected. Use the designated method to accept the marked ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The BMD displays or provides an indication of the selection for only the first candidate selection in first partisan contests. After review, the ballot is accepted and is then cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The BMD displayed or provides an indication of the selection for only the first candidate selection in first partisan contests. After review, the ballot was accepted and was then cast successfully on the precinct tabulation device.</p>
1030	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1040	<p>Select the option for a write-in candidate in the first partisan contest. Use the designed method to input “John Doe”.</p>

	<p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for a write-in candidate.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for a write-in candidate.</p>
1050	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review observing only the write-in candidate in the first partisan contest is selected. Use the designated method to accept the marked ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The precinct tabulation device displays or provides an indication of the selection for only the write-in candidate “John Doe” in first partisan contests. After review, the ballot is cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The precinct tabulation device displayed or provided an indication of the selection for only the write-in candidate “John Doe” in first partisan contests. After review, the ballot was cast successfully on the precinct tabulation device.</p>
1060	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1070	<p>Select the option for a write-in candidate in the first “N of M” contest. Use the designed method to input “John Doe” for all selections. Observe any activity to preclude the same input.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a duplicate vote selection for a write-in candidate. If no indication is provided, then trace the ability to adjudicate the vote through the entire system. It may require the EMS component to verify.</p> <p><i>Actual:</i> Adjudication is handled by the EMS.</p>
1080	<p>Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review observing only the write-in candidates in the first “N of M” contest are selected. Use the designated method to accept the marked ballot. Then, on the precinct tabulation device, use the designated method to cast the voted ballot.</p> <p><i>Expected:</i> The precinct tabulation device displays or provides an indication of the selection for only the write-in candidates “John Doe” in first “N of M” contests. After review, the ballot is cast successfully on the precinct tabulation device.</p> <p><i>Actual:</i> The precinct tabulation device displayed or provided an indication of the selection for only the write-in candidates “John Doe” in first “N of M” contests. After review, the ballot was cast successfully on the precinct tabulation device.</p>
1090	<p>Repeat steps 1000- 1050 from above using an ADA input device.</p>

	<p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____</p> <p><i>Actual:</i> The steps were repeated correctly.</p>
1100	<p>Disable voting on the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1100	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a candidate and a write-in candidate functions.</p>	

Test Case Identifier: 07– 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)	
PA ST 25 P.S. § 3031.7 Requirements:	(7) If it is of a type that registers the vote electronically, the voting system shall preclude each voter from voting for more persons for any office than he is entitled to vote for or upon any question more than once.
Test Objective: To determine if the voting system allows over voting on contests and questions	Test Configuration: Ballot Marking Device (BMD) and precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	<p>On the BMD, activate a ballot for voting.</p> <p><i>Expected:</i> The ballot is presented and vote selections can be input.</p> <p><i>Actual:</i> The ballot was presented and vote selections could be input.</p>
1010	<p>Select the first candidate in the first partisan “1 of 1” contest excluding a straight party contest.</p> <p><i>Expected:</i> The BMD displays or provides an indication of a vote selection for the first candidate in the first partisan “1 of 1” contest excluding a straight party contest.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of a vote selection for the first candidate in the first partisan “1 of 1” contest excluding a straight party contest.</p>
1020	<p>Attempt to select the second candidate in the first partisan “1 of 1” contest ensure the contest is the same contest as voted in step 1010. Observe the action of attempting to place a second vote.</p> <p><i>Expected:</i> The BMD displays or provides an indication of an attempt to over vote. The BMD might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of an attempt to over vote.</p>
1030	<p>Attempt to select the write-in option. Observe the action of attempting to input a write-in.</p> <p><i>Expected:</i> The BMD displays or provides an indication of an attempt to over vote. The BMD might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of an attempt to over vote.</p>
1040	<p>Use the designated method to advance the ballot to the first “N of M” contest. Select the first “N” candidates in the contest. (e.g. in a Vote for Two contest the first two candidates would be selected).</p> <p><i>Expected:</i> The BMD advances to the first “N of M” contest. Once selected, the BMD displays or provides an indication of a vote for the first “N” candidates in the first “N of M” contest.</p> <p><i>Actual:</i> The BMD advanced to the first “N of M” contest and, the BMD displayed or provided an indication of a</p>

	vote for the first “N” candidates in the first “N of M” contest.
1050	<p>Attempt to select the “N +1” candidate in the first “N of M” contest ensure the contest is the same contest as voted in step 1030. Observe the action of attempting to place an over vote.</p> <p><i>Expected:</i> The BMD displays or provides an indication of an attempt to over vote. The BMD might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The BMD advanced to the first “N of M” contest. Once selected, the BMD displayed or provided an indication of a vote for the first “N” candidates in the first “N of M” contest.</p>
1060	<p>Use the designated method to advance the ballot to the first “Question” contest. Select the “Yes” option in the contest.</p> <p><i>Expected:</i> The BMD advances to the first “Question” contest. Once selected, the BMD displays or provides an indication of a vote for the “Yes” option in the first “Question” contest.</p> <p><i>Actual:</i> The BMD advanced to the first “Question” contest. Once selected, the BMD displayed or provided an indication of a vote for the “Yes” option in the first “Question” contest.</p>
1070	<p>Attempt to select the “No” option in the first “Question” contest ensure the contest is the same contest as voted in step 1050. Observe the action of attempting to place an over vote.</p> <p><i>Expected:</i> The BMD displays or provides an indication of an attempt to over vote. The BMD might disallow the selection and not display any communication.</p> <p><i>Actual:</i> The BMD displayed or provided an indication of an attempt to over vote.</p>
1080	<p>Use the designated method to advance the “Ballot Review”. Observe the “Ballot Review” to see if the above selections are indicated. Use the designated method to mark the voted selections onto the paper ballot. Use the designated mark to cast the marked ballot on the precinct tabulation device.</p> <p><i>Expected:</i> The ballot marking device advances to the “Ballot Review” screen and marks the selections. After review, the ballot is cast successfully.</p> <p><i>Actual:</i> The ballot marking device advanced to the “Ballot Review” screen and marked the selections. After review, the ballot was cast successfully.</p>
1090	<p>Repeat steps 1000- 1070 from above using an ADA input device.</p> <p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____ Repeat 1060 _____ Repeat 1070 _____</p>

	<i>Actual:</i> The steps were repeated correctly.
1100	<p>Disable the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1110	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The attempts to select more persons than the vote for and any question more than once are unsuccessful.</p>	

Test Case Identifier: 10 – 25 P.S. § 3031.7(10) Ballot Review and Change (Regular/ADA)	
PA ST 25 P.S. § 3031.7 Requirements:	(10) If it is of a type that registers the vote electronically, the voting system shall permit each voter to change his vote for any candidate or upon any question appearing on the official ballot up to the time that he takes the final step to register his vote and to have his vote computed. If it is of a type that uses paper ballots or ballot cards to register the vote and automatic tabulating equipment to compute such votes, the system shall provide that a voter who spoils his ballot may obtain another ballot; any ballot thus returned shall be immediately cancelled and at the close of the polls shall be enclosed in an envelope marked "Spoiled" which shall be sealed and returned to the county board.
Test Objective: To determine if the voting system allows the voter to review the selections and change a vote selection before cast of the ballot.	Test Configuration: Ballot Marking Device (BDM) and precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the devices and the polls are open, ready for voting.
Step	Description
1000	On the BMD, activate a ballot for voting. <i>Expected:</i> The ballot is presented and vote selections can be input. <i>Actual:</i> The ballot was presented and vote selections could be input.
1010	Select the first candidate in the first all "1 of 1" contest excluding a straight party contest, the first "N" candidates in all "N of M" contests, and select the "Yes" option in all "Question" contests. <i>Expected:</i> The BMD allows for the navigation and the voting inputs to be selected as described above. <i>Actual:</i> The BMD allowed for the navigation and the voting inputs to be selected as described above.
1020	Use the designated method to advance the "Ballot Review". Observe the "Ballot Review" to see if the above selections are indicated. <i>Expected:</i> The BMD advances to the "Ballot Review" screen. The vote selections can be verified. <i>Actual:</i> The BMD advanced to the "Ballot Review" screen. The vote selections could be verified.
1030	Use the designated method to retract to the first partisan "1 of 1" contest excluding the straight party contest.. <i>Expected:</i> The BMD navigates to the first partisan "1 of 1" contest excluding the straight party contest. <i>Actual:</i> The BMD navigated to the first partisan "1 of 1" contest excluding the straight party contest.
1040	Deselect the first candidate selection and select the second candidate. <i>Expected:</i> The BMD indicates the de-selection of the first candidate and the selection of the second candidate.

	<p><i>Actual:</i> The BMD indicated the de-selection of the first candidate and the selection of the second candidate.</p>
1050	<p>Use the designated method to advance to the first “Question” contest. De-select the “Yes” option and select the “No” option.</p> <p><i>Expected:</i> The BMD navigates to the first “Question” contest and provides an indication of the de-selection of the “Yes” option and a selection of the “No” option.</p> <p><i>Actual:</i> The BMD navigated to the first “Question” contest and provided an indication of the de-selection of the “Yes” option and a selection of the “No” option.</p>
1060	<p>Use the designated method to advance the “Ballot Review”. Observe the “Ballot Review” to see if the above selections are indicated. Use the designated method accept and mark the ballot. Then, on the precinct tabulation device, use the designated method to cast the voted selections.</p> <p><i>Expected:</i> The BMD advances to the “Ballot Review” screen. After review, the ballot is accepted and is then cast successfully.</p> <p><i>Actual:</i> The BMD advanced to the “Ballot Review” screen. After review, the ballot was accepted and was then cast successfully.</p>
1070	<p>Repeat steps 1000- 1060 from above using an ADA input device.</p> <p><i>Expected:</i> Repeat 1000 _____ Repeat 1010 _____ Repeat 1020 _____ Repeat 1030 _____ Repeat 1040 _____ Repeat 1050 _____ Repeat 1060 _____</p> <p><i>Actual:</i> The steps were repeated correctly.</p>
1080	<p>Disable voting on the BMD. Close the polls on the precinct tabulation device and print the closed polls report tape.</p> <p><i>Expected:</i> The polls closed and a report is printed.</p> <p><i>Actual:</i> The polls closed and a report was printed.</p>
1090	<p>Review the closed polls report to ensure all selections input above are recorded and reported correctly.</p> <p><i>Expected:</i> The closed polls report presents the accumulated totals for the selections input above.</p> <p><i>Actual:</i> The closed polls report presented the accumulated totals for the selections input above.</p>
<p>Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The voter input can be changed by navigating through the ballot after a ballot has been reviewed.</p>	

