STATE OF NEW JERSEY

OFFICE OF THE ATTORNEY GENERAL

DEPARTMENT OF LAW AND PUBLIC SAFETY

- - -

Public Hearing Re:

Criteria for Voter-Verified Paper Record for

Direct Recording Electronic Voting Machines

Stenographic Report of Public Hearing Held

The National Guard Armory

155 Eggerts Crossing Road

Lawrenceville, NJ

- - -

Wednesday, October 10, 2007

9:00 a.m.

BEFORE: RICHARD C. WOODBRIDGE, ESQUIRE

2   MEMBERS OF THE COMMITTEE

3

4   Daryl P. Mahoney

5   John Flemming

6

7   APPEARANCES:

8   Donna Kelly, Esquire

9   Gary Greenhalgh, PhD, ES&S

10   Jane Greenhalgh, ES&S

11   Willie Wesley, Jr., ES&S

12   Kevin Kerrigan, ES&S

13   Steve Pearson, ES&S

14   Margaret L. McCabe

15   Abbey Kluska

16   Karen Dumars, Deputy Attorney General

17   Jason Bistone, Deputy Attorney General

18   Mitchell Darer

19   Nirwan Ansari

20   Ari Jain

21   Pitipatana Sakarindr, PhD

22   Chunhua Chen

23   Chao Zhang

24

25

2   MS. KELLY: Can I have your

3 attention, please. I think we are going to

4 start this hearing. My name is Donna Kelly.

5 I've been doing elections for the state for

6 about 28 years maybe, I'm not really sure.

7 But this is like the fourth voting machine

8 hearing we're attending. The way it works is

9 that the voting machine committee which is

10 Mr. Woodbridge, he has been Daryl Mahoney who

11 is assistant supervor for the assistant.

12 Mr. John Flemming who is the officer of the

13 training, what is your title.

14   MR. FLEMMING: Managing specialist.

15   MS. KELLY: But today what is going

16 to happen is the ES&S voting machine is only

17 used in Sussex county, it's going be brought

18 before the committee for examination. We're

19 only here for purposes of examining the

20 machine for voter verified paper trail. That

21 is an issue, that is the sole reason we're

22 having the committee. State legislature has

23 passed a law that says by January 1, 2008

24 we're supposed to have paper trail, so we will

25 not likely meet that deadline, however, we're

2   moving forward with our process.   The

3   committee has already looked at two other

4   machines, the one machine is used in both of

5   our counties.   And also the iVotronic machine

6   but the procedure today will be the committee

7   will address the vendor, we will demonstrate

8   the machine, we certainly will allow public

9   comment.   In fact, I'm very happy to see the

10   members of the Sussex County Board is here

11   because it's critical to listen to the

12   administrators who actually run the machines.

13   The way Mr. Woodbridge operates is very

14   informal.   He is very good.   He is very

15   patient.   Even though initially when we

16   decided to have this hearing we thought it was

17   five minutes per speaker, that's not how it

18   turned out the last time.   Where is our public

19   advocate representative.   But anyway and then

20   also the NJIT representative New Jersey

21   Institute of Technology in our state

22   graciously accepted the state's challenge to

23   do the testing of the machine vis-a-vis the

24   state criteria, so they will also be here for

25   the benefit of the committee.   Just

2   procedurally the way it works after the

3   conclusion of today's hearing, the committee

4   will write a report recommendation about

5   whether or not the machine should or should

6   not be accepted in terms of this paper trail.

7   The machine itself is already accepted by the

8   state. The attorney general will take it

9   under advisement and she will make the final

10 decision. The prior machines looked at by the

11 committee were not acceptable. The attorney

12 general accepted that determination, so those

13 machines are very likely going to go back for

14 a second amount of testing. It's the first

15 round on these. So without any further delay,

16 Mr. Woodbridge.

17   MR. WOODBRIDGE: Thank you very

18 much, Donna. It's good to be here. My name

19 is Dick Woodbridge. Just a little bit of

20 additional background. Title 19 of the New

21 Jersey statute has a requirement for committee

22 to review new types of voting machines in the

23 State of New Jersey, proposed State of New

24 Jersey and recommend through the attorney

25 general's office whether or not in our opinion

2   it meets the criteria. The criteria are

3   established by the Attorney General's Office

4   and what we'll do at some point in the

5   proceeding is to walk through each and every

6   part of this and then we'll write a report.

7   It's not going to be an instant data exercise,

8   it will take probable a week or so to get the

9   report together and then of course we don't

10   really approve or disapprove. We make the

11   recommendation and the attorney general with

12   the assistance of Donna and the rest of the

13   staff decide what to do with it.

14   We entered a new phase last July

15   when we started taking over paper trail

16   devices and this is a continuation of that.

17   We didn't have specific paper trial criteria

18   until this year, so we're using criteria that

19   are different from those applied to typical

20   DREs and to scan devices. So it's a bit of a

21   new world for us. I would like to thank the

22   Attorney General's Office for setting this up

23   and for Donna for a nice introduction. Karen

24   Dumas I think is with the AG's office. Hello

25   Karen and Jason. You're new, is that right.

2   MR. JASON: Yes.

3   MR. WOODBRIDGE: Good to have you

4   here. Anyone else from the AG's office?

5   You've been introduced to Darren Mahoney on my

6   right your left and John Flemming on my left

7   your right with our parts committee. The

8   statute oddly enough requires that one of the

9   participants in the committee be a half

10   attorney, I don't know any state in the nation

11   that does that but I was asked and my

12   committee wanted to sit on a committee and so

13   I don't know how many hearings it's been

14   through, I do know I've been through about 34

15   since 1998 and probably another three prior to

16   that. So I've seen just about everything I've

17   seen maybe twice. We've had the pleasure of

18   ESS come before us prior five or six times the

19   last ten years for a variety of different

20   items and I would say on the record that we

21   all were provided John and Darrell two, two

22   large boxes of documentation probably. The

23   most thorough documentation you see to date

24   for the machines.

25   Couple of ground rules. We try to

2   keep the format clearly tight because we have

3   a lot of ground to cover. We make sure we

4   give all the vendors an opportunity to provide

5   input. These proceedings are recorded by Kim

6   Horsley over here who patiently tries to take

7   down every word. I try to remember to talk in

8   the microphone and speak fairly slowly and so

9   if you do have comments, make sure that Kim

10   can hear them. I've asked Kim to interrupt if

11   at any time she can't understand what's going

12   on. So, that may happen.

13   The procedure is that we'll go

14   through the same procedure as we did last

15   time. Well after the initial introductions

16   I'm going to give members of the audience to

17   just introduce themselves for the record. We

18   don't have a large audience today, then we'll

19   ask the vendor to make a presentation just a

20   general summary presentation of their device

21   then we'll ask NJIT to give their presentation

22   specifically three part presentation with

23   Mitch giving an overview and Dr. Jan, I guess

24   providing the general procedure for the

25   testing and Dr. Amar isn't here, Asari, I will

2   be giving specifics after that's done we will

3   probably ask if the representative from the

4   state with regard to disabilities is here, are

5   you here, very good. Make his presentation

6   and with some luck by eleven o'clock we'll

7   start marching through the specific criteria.

8   I ask your indulgence in the outset not to ask

9   any questions until we get the public comment

10   section, the public comment section portion.

11   There will be an opportunity for anybody with

12   comments or questions to do that. All

13   questions should be addressed to the chair, so

14   that we have some organization to it. One

15   other question, yes. We ask you to, remind

16   you to turn off your cell phones. I would

17   also so I'm going to start off by you've met

18   everybody from the AG's office. I ask the

19   people in the audience some of who are

20   familiar faces but since we have a fairly

21   small audience to introduce themselves for the

22   record and why don't you start off in the

23   front row.

24   MR. GREENHALGH: Gary Greenhalgh,

25   Election Systems and Software.

2   MS. GREENHALGH: Jane Greenhalgh,

3   Election Systems and Software.

4   MR. WESLEY: Willie Westley,

5   Election Systems and Software.

6   MR. KNOUES: Flavio, F-L-A-V-I-O

7   Knoues, K-N-O-U-E-S, Assistant Deputy Public

8   Advocate.

9   MR. GLADNEY: Alexander Gladney,

10   G-L-A-D-N-E-Y, Assistant Deputy Public

11   Advocate.

12   MS. KLUSKA: Abbey Kluska,

13   K-L-U-S-K-A, manager of elections technology

14   for Sussex county.

15   MS. McCABE: Marge McCabe,

16   administrator Sussex county board of

17   elections.

18   MS. DUMARS: Karen Dumars, Deputy

19   Attorney General.

20   MR. BISTONE: Jason Bistone, Deputy

21   Attorney General.

22   MS. MULDER: Michelle Mulder.

23   MR. R. WOODBRIDGE: Then we have

24   Donna.

25   MR. MILLSTEIN: David Millstein,

2   state ADA administrator with the Department of

3   Treasury.

4   MR. R. WOODBRIDGE: I'm going to ask

5   Mitch to introduce his group when we get to

6   that part of the program if that's okay. And

7   David, good to have you back by the way. So

8   with no further ado, Gary, are you going to be

9   the master of ceremony. Steve, why don't you

10   introduce your team and if you don't mind

11   walking us through, give a summary of the

12   advisory.

13   MR. PEARSON: Thank you. I would be

14   happy to do so. My name is Steve Pearson. I

15   am the vice president of certification for

16   Election Systems and Software. Joining me on

17   my right is Kevin Kerrigan. He is part of our

18   certification team and has been involved in at

19   least the initial kick off of the NJIT review

20   of our system and overview for them has been

21   involved in this process for initial review.

22   Before we get into a demonstration

23   or presentation of the system, I just wanted

24   to give you a little bit of background of what

25   we're presenting today and what we're offering

2   is that the electronic, electronic DRE

3   equipped with the real time audit log referred

4   to as the RTAL system. The version that is

5   operating on the system today is version

6   92.0.0 which is currently in the final steps

7   of testing with the election assisted

8   commission new testing and certification

9   procedures. We have completed all of the

10   function testing successfully. We're just in

11   the final stages. We believe we'll be

12   complete with the final testing and all

13   documentation, discrepancy clean up, hopefully

14   within the next two weeks, two to three weeks

15   and should have a final testing at least a

16   completion letter from the ESTL which is

17   assistant lab as to performing the testing on

18   this system.

19   THE COURT: We will go back to Donna

20   Kelly about that.

21   MR. PEARSON: Sure. As soon as we

22   have a full text report from the ESTL we will

23   offer that at the same time.

24   MR. WOODBRIDGE: Probably easier to

25   go up there. You might be separated from the

2   microphone a bit.

3   MR. KERRIGAN: My name is Kevin

4   Kerrigan. I am the state certification

5   manager. I've been working with NJIT through

6   the review responding to any of their requests

7   or information or issues that arose during the

8   testing. Again what we have here today is the

9   iVotronic DRE solution and then we have our

10   real time audit log referred to as RTAL.

11   We'll go through kind of how the system would

12   be implemented chronologically in an election

13   and kind of talk about some of the security

14   systems along that path. So initially from

15   our software we're able to create a PEB that's

16   called the election PEB. This contains a 16

17   bit encryption algorithm that is specific for

18   every election. At the warehouse personnel

19   will go through each iVotronic and load this

20   key onto the terminals. Now these terminals

21   contain that key specific for that election

22   and what we've immediately implemented at that

23   stage is any person the PEB is not

24   specifically for will not be able to activate

25   that terminal. That key has to match up that

2   key that is put on for every PEB has to match

3   up to the election. So if that would happen

4   at the warehouse level the assistant would be

5   transported to the polling location and this

6   election key never enters into the field.

7   It's just a warehouse security level PEB for

8   applying that.

9   MR. WESLEY: Let me add to what he

10   said that's very important because one of the

11   concerns a lot of folks have there are a lot

12   of these PEBs out there. How do we know

13   someone isn't going to come and tamper with

14   this key. The encryption and the PEB code is

15   loaded is specific for this election is used

16   one time and one time only. So the one that

17   the poll worker has is the only one that's

18   legitimate. If you put another PEB for

19   another election in it will reject it right

20   away.

21   MR. KERRIGAN: Just to clarify this

22   poll worker would never have the terminal that

23   is never implemented to the field. What they

24   then would have at the polling election is

25   what we have is the supervisor PEB. This

2   contains a code as well. It's called our

3   EEC-3 code, our motion polling location. It's

4   terminal has a key on it. All the terminals

5   has been cleared and tested before it's sent

6   out to the field to make sure it is out at the

7   field, then you would open the election with

8   the supervisor PEB. How we track these we

9   implement these in two ways; they are

10   administered with the use of lables, one we

11   label as a master, say this is our typical

12   polling location set up, we have four machines

13   the polling supervisor an hour before would go

14   that terminal serial number is noted on the

15   PEB we label that PEB as master. It's only

16   function is to be used for the opening and

17   closing of the terminals. You open your

18   terminals, secure that master key until the

19   end of election day and then the PEB would be

20   administered to the pole workers. We call I

21   think that's supervisor PEB or advocators PEB

22   activator. So that PEB would be held by the

23   poll workers. They would greet the voter at

24   the registration desk, see which ballot they

25   are supposed to vote, escort them physically

2   to the machine and the poll worker themselves

3   would activate the ballot in our system which

4   is required to as poll worker. The voter

5   never comes in contact with any media so they

6   would activate the ballot by inserting the PEB

7   into the system.

8   MS. McCABE: Marge McCabe, Sussex

9   County board of Election. When we issue the

10   PEB to the poll worker and we experience them

11   and use it, they hold it like a pacemaker.

12   They don't let it go. It's not on the table

13   where somebody could pick it up. They hold it

14   so tight that's how seriously our poll workers

15   take the job.

16   MR. KERRIGAN: I ask any procedural

17   comments you make are very welcome as with any

18   election whether it's tape or PEB a lot are

19   wrapped around the procedure and how you

20   implement, so it's very important.

21   MR. WESLEY: The comment I want to

22   make sure, that there would be a signal that

23   says, please remove supervisor PEB the that is

24   so that we help the poll worker remember to

25   keep it in their possession.

17

2   MR. KERRIGAN: So at this point as

3   indicated the poll worker with the PEB would

4   go back to the registration desk leaving the

5   voter to vote for privacy. If there was a

6   gynasium for the voting location these would

7   be oriented 180 degrees the other way. In

8   other words, your back would be to the wall

9   preventing any access or any loitering which

10   again that is a procedural thing to administer

11   by the poll worker they need to follow a

12   standard set up and logic for how to set up

13   their voting machine, but at this point I

14   remove the PEB, the voter is now left to vote

15   the indication says do you want to vote

16   initially on the screen or do you want to use

17   the audio ballot. The audio ballot could be

18   used by plugging in headphones, there's a jack

19   here on the right side toward the bottom then

20   they would interact with our four key panel

21   here, this is the model by electronic it's

22   what we refer to as the four key id, an

23   electronic navigation bullet we have an up and

24   down arrow for we have select button for

25   making RED and this circular purple button is

18

2   a level of volumes. So first off pull up a

3   visual by touching the screen there is going

4   to be a ballot level voter first given a one

5   two three voting instruction screen and I now

6   brought up the first page of contest. We have

7   several different templates for how we could

8   initially lay this out what you see here is a

9   one column template it's in color that means

10   the voter candidate field takes up the entire

11   width of the screen you can touch anywhere in

12   that screen to activate that it's visually

13   shown with a check mark in that field and what

14   our real time monolog every time I make a

15   selection on the screen whether that is a vote

16   for or cancellation for an initial election

17   it's noted in real time on the screen.

18   MR. PEARSON: Can I ask you when you

19   started the voter sessions what transactions

20   were printed on on the real time printer.

21   MR. KERRIGAN: In real time it's

22   probably 12 lines here at the beginning of

23   every voting session what's printed on the

24   real time monolog the terminal is activated

25   and the time is activated the serial terminal

2 as well as the serial number of the PEB that

3 was used to activate it. We have the battery

4 voltage and we have the mode of the terminal

5 which during election day it's referred to as

6 open, open for voting. Then we also have some

7 voting session identification numbers there

8 are three sets of numbers which will probably

9 adjusted for the NJIT system and then the

10 final line after that initial opening session

11 my first election president selected Peter B.

12 Randall. So that those initial lines are

13 printed at the beginning of every voting

14 session. Now in this vote for one the way it

15 works if I make a different selection than

16 what is initially, two actions are going to

17 happen. It first deselected my first and then

18 it is applies my action to the second

19 candidate so simply put on the real time it

20 says president canceled Peter B. Randall and

21 then it says president selected it noted both

22 actions and the selection vote, vote what

23 happens if you hit the line.

24   MS. MULDER: Which line.

25   MR. KERRIGAN: Any line between any

2   line between. It will probably go one way or

3   the other I don't know, there is actually dead

4   space so you are going to get one or the

5   other.

6   MS. MULDER: Does it assume you want

7   a write in.

8   MR. KERRIGAN: I was in between the

9   write in and the last candidate.

10   MR. WESLEY: The important thing is

11   it gets you immediate feedback of what did

12   occur.

13   MR. KERRIGAN: You not only have the

14   additional feedback but you have the paper

15   identification trail of any action made. So

16   to proceed through here we have a six page

17   ballot indicated at any point I could hit the

18   question mark and bring up the initial voting

19   instructions back to the ballot. This is the

20   vote for one. You want to vote for two I kind

21   of supply how the logic works on this if I

22   make my first two selections now we can't have

23   an auto deselect feature because there is no

24   way for the logic to know which is

25   automatically deselected. So if someone were

2   to make too many selections or an overvote

3   they will be provided a warning that you have

4   already made the maximum number of selections

5   in this contest. You must first deselect one

6   of your candidates to make a further

7   selection. So if I come back to my original

8   two selections I would first have to deselect

9   them and select the other one and as we keep

10   saying everything is noted in our real time

11   audit log as well as I was prompted that is

12   also noted exact words it says overvote

13   attempt on this contest colon and when it

14   gives the contest name of freeholders. We

15   proceed I will leave a couple blank here.

16   Here is a vote for five. I will vote a write

17   in my write in selection is to select here and

18   we have seven propositions on this election

19   and just for note these are the same elections

20   that we use for the selection by NJIT. They

21   did require two different elections to be

22   coded and these first three machines closest

23   to me have the I believe this is the general

24   and the one on the end is a primary and it has

25   a different visual layout that uses two

2   columns for the contest, so you will see two

3   columns for information.

4   MR. PEARSON: When you select a

5   write in it chose a write in. What was the

6   transaction that took place on the printer

7   itself.

8   MR. KERRIGAN: On the printer

9   there's no law that you enter the write in.

10   It just notes your selection. It treats it as

11   that name was originally. The contest the

12   exact, so it says character commission

13   selected it says I selected see a request it

14   proceeds that with the star. That is the only

15   indication that was a write in selection and

16   not one that was originally on the ballot but

17   it doesn't note that I entered write in

18   because we're noting all voter choices or

19   deselections, so it notes the selection and

20   writes the name proceeded with a star.

21   So I am now at page six of six for

22   voting mode. The next button the button

23   that's now been stopped out rather than saying

24   next it says review. When I hit review, I'm

25   showing all my choices not all the candidates

2   selection but just the choices that were made

3   for every contest as well as any contest that

4   I undervoted it is written in red. No

5   selection made. I can enter that contest or

6   reenter contest and I'm brought up the

7   candidates for that contest and make a

8   reselection. When I did first enter the

9   summary mode it did make a note enter summary

10   page so now I have pressed cancelled, you're

11   able to audit that change or that alteration

12   of choice was made after I entered the summary

13   ballot. When I hit review, I'm taken back to

14   the review screen and my alteration is shown

15   here. We have a couple undervotes and this is

16   three pages and just note right now this is

17   our vote button this is how we cast a ballot

18   it's paper equivalent of dropping your paper

19   ballot into a ballot box which is a point of

20   no return for the voter and right now it is

21   did he activated the second page.

22   MR. WESLEY: Actually what was I was

23   going to show I was going to show what it

24   would do if you try to cast your vote

25   prematurely, so if a voter before giving all

2   that it would give instructions go on the page

3   they must first view all of the pages of the

4   ballot and all the pages of the summary

5   portion before they can cast their ballot.

6   MR. KERRIGAN: I believe I showed

7   some of that at the nine o'clock demo. So now

8   that I have entered the third page this little

9   button it is a little button and even if I go

10   back it can make changes as I like before you

11   you end the end of that summary screen we now

12   allow to you vote. At that point a voter can

13   press the red vote button just kind of some

14   logical interfacing of why we did it this way

15   the voter is sitting here touching the screen

16   for the entire voter section we make to press

17   the hardware button as opposed to an on screen

18   test. Just so that there's no confusion of

19   well I was voting and then I hit voter

20   something like that it's a separate item

21   located on alterate location. I'm going to

22   hit vote. At this point my vote summary is

23   printed and as Steve mentioned this prints all

24   of your selections that were made including a

25   barcode and that's readable by any RTS barcode

25

2   and the selection scrolls up nine inches right

3   now as programmed to leave the paper blank for

4   the next voter that comes. So that vote

5   summary is not a rejectable form or anything.

6   It's use for audit purposes so a poll worker

7   during an audit wouldn't have to go through

8   any added audit here and wouldn't have to do

9   pluses and minuses you can have a very easlily

10   reviewable audit trail.

11   MS. MULDER: If you saw something on

12   the paper that didn't match what you did what

13   would your remedy be?

14   MR. KERRIGAN: That doesn't have --

15   it's fully accurate whatever selection you

16   made is.

17   MS. MULDER: If you're using the

18   head set is there a way for the blind voter to

19   verify from the paper or are they verifying

20   from the digital feed.

21   MR. KERRIGAN: They are given an

22   audio feedback for every selection made just

23   like a visual voter as well as the review

24   screen they are too forced to go through the

2   their ballots and they will be read all their

3   previous ballots.

4   MR. WESLEY: What he said you have

5   to determine locally how you're going to

6   handle covering this screen in the event that

7   visual impaired person was voting it does

8   record their choices on here as well.

9   MS. MULDER: To protect the privacy.

10   MR. KERRIGAN: Another feature that

11   I would like to note I think this is pretty

12   important for some of the issues we'll be

13   discussing later. Right now we have this

14   machine programmed for a nine inch window. So

15   what it has to at the end of every voting

16   session in order to leave this nine inches of

17   wasted paper, not wasted because you're

18   ensuring the privacy of the vote. This

19   software contains four point five window

20   cutting it in half and what we do we attach a

21   steel plate that matches this material with

22   adhesive and that would be on the top portion

23   and then the machine will ask for the four

24   point five section that leaves a blank

25   section, so essentially you are saving four

27

2   point five inches of paper per vote cast so

3   it's pretty significant amount of paper

4   savings in this firm ware version compared to

5   some of the previous ones in the state. NJIT

6   testing the machines are already programmed

7   for nine inches. So, there will be some

8   discussions about how many votes can you get

9   per roll. There are a lot of issues when

10   trying to come to that number, but that is a

11   very significant fact in terms of how many

12   votes or sessions you can get on a roll.

13   Continuing the roll its a 300 feet of thermo

14   paper it is the only consumable in this

15   because it is a thermo printer you're not

16   dealing with ink on election day or anything

17   you just have a roll of paper.

18   MR. WESLEY: There aresome things

19   about this paper also there's sensors inside

20   the printer that will alert you when you have

21   leveled the amount of paper gets low there is

22   a rooster tail that is at the very end a red

23   strip to give you a visual indication your

24   getting closer.

25   MR. WOODBRIDGE: How hard is that to

2   change a roll. You got 300 feet if the takes

3   18 inches per voter do the math but 200 voters

4   so if you get to that level, how do you how

5   hard is it to change rolls there.

6   MR. KERRIGAN: I will take that

7   question and kind of wrap it into a lot of

8   different security issues. First of all with

9   the printer it is behind a lock and key

10   mechanism which unlocked the door flips up and

11   anybody is welcome to walk back here right now

12   it will be a little crowded, there are cords

13   to contend with. So here is a printer along

14   the right side from the back we do have a lock

15   and key to security it. This is the door that

16   will clip up on the hinge, you will apply a

17   tamper area sticker seal over that door. So

18   when a paper roll needs to be changed or there

19   are any issues you can unlock the printer and

20   its a reel-to-reel our feed reel what is the

21   first one referred to as paper roll the paper

22   roll goes on this top portion and here is your

23   pick up reel all your results are being

24   accumulated onto. There is instruction how to

25   load as well as on the printer and what that

2   entail is when your roll gets low you would

3   take out your take up reel which is on a spool

4   you would administer the transportation of

5   that whatever local procedure calls for that

6   can mean putting it in I believe Gary said is

7   how they handle it in West Virginia and then

8   you would take your new paper roll, slide it

9   on here it gets fed through a little gap once

10   the paper hits that recognizes it grabs the

11   paper and brings it up to a length about here

12   enough you can then attach that in onto your

13   tape up spool, you get it wound up and started

14   put the spool in and you're good to go.

15   You're up and running with a new roll.

16   I think we're kind of esteemed in

17   the field. A person that has done this

18   several times can probably change a roll from

19   anywhere from 30 seconds to a minute. A first

20   time user the only trick is getting it started

21   on the take up reel so it may take him a

22   minute and a half to two minutes to change the

23   reel. It's fairly quick. The other

24   procedural thing aside from changing the reel

25   you would have to break that seal following

2   any procedures you would have to do for

3   applying a new seal document all your security

4   systems there.

5   MR. PEARSON: What have some of the

6   other states done with that the reel of the

7   votes that have been cast.

8   MR. WESLEY: There's usually some

9   sort of chain of custody established as far as

10 how you secure that, but once that's removed

11 you put it in an envelope or some sort of

12 ziplock bag where you can put a seal on it a

13 numbered seal so you can ensure the chain of

14 the custody is not broken for that because

15 that is the official ballot in some states so

16 would you treat it the same way you would

17 treat a paper ballot. You would drop through

18 an optical scan read error through a ballot

19 box.

20   MR. KERRIGAN: Continuing on with

21 some of the abilities to seal and such of

22 course your primary focus is your election

23 results our your stored onto a remove panel

24 flash media at the top of the screen we store

25 our votes internally throughout voting day

2   they are stored on three internal chips which

3   are two of them are sodered flash chips the

4   other one is removable at the start of voting

5   sessions those three internal memories check

6   each other on our system and they make sure

7   they are all reading and writing the

8   information before it allows any votes to

9   proceed. We have the internal memory source

10   when you close polls all that data is written

11   to your master PEB that you open and close

12   with as well as to the compact flash. Vote

13   totals are stored on the EPD on the compact

14   flash where compact as well as the audit log

15   from all actions performed on this system. So

16   those two pieces of media would then be

17   transported to central for tabulation. So,

18   that compact flash card or we've already

19   talked about the maintenance of the PEB in

20   Sussex Count, kind of explained how dearly

21   they protect that. With the compact flash

22   themselves it's protected through a sliding

23   door which has some loops here you could apply

24   a wire seal to or sticker seal over that as

25   well. This gray cord that you see here which

2 is kind of sticking out that could be tucked

3 under the top portion would be visible to the

4 voter we apply seals over that tamper evidence

5 seals as well as the power connection is

6 located on the top. These are battery powered

7 and we plugged them in. The battery is

8 powdered by the AC/DC. If I were to

9 disconnect the power during a voting there's

10 no distinction or anything you're still

11 running on battery powdered it's just now the

12 battery is not charged.

13   MR. WOODBRIDGE: How long is the

14 battery life on that.

15   MR. KERRIGAN: An active use for

16 federal use we have to pass at three hours.

17   MR. PEARSON: I was thinking it was

18 two hours that we had.

19   MR. KERRIGAN: Two hours active use

20 and I think ten hours inactive use. I

21 honestly can't say the exact number.

22   MR. WESLEY: I can add this he is

23 correct it does run off batteries when it is

24 plugged in it does two things, one it does a

25 triple charge to the battery as well as power

2 the flash screen when you disconnect at end of

3 the session you don't see this screen the

4 screen that's up here now that goes away to

5 prolong the battery life. My experience in

6 working with these depending on the amount of

7 activity you have whether you're using an

8 audio you get a little more than three hours

9 on active use on the terminal.

10   MS. MULDER: If the battery ran out

11 before the election was over what would be the

12 result.

13   MR. WESLEY: You wouldn't vote on

14 the machine.

15   MS. KLUSKA: Abbey Kluska from

16 Sussex County. Since we do already use the

17 machine but not with the paper trial we can

18 answer that question pretty well. If the

19 battery were to run out and voter were in mid

20 vote it would tell you battery is too low to

21 continue. The poll worker would be alerted,

22 the voter would then plug it back in and then

23 it works. It's as simple as that.

24   MR. PEARSON: Once power was

25 restored. And and once powdered was restored.

MS. MULDER: All the cast vote

ending for that voter. And and every vote

that is cast is recorded to.

MR. PEARSON: They are security.

MR. KERRIGAN: Another note about

that at any time visually confirm that there

is a public count at the end of the electronic

that tells your number of votes count.

MS. McCABE: Marge McCabe Sussex

County because of the size, it's the size of a

laptop and there's no information in the

machine when it goes out it is an empty

machine. We verify zero total before it goes

out, we have technicians on the road who can

actually have them in their car and if there

is an issue with a machine, if there is an

issue with a battery we have between two and

five machines in every district so they can be

switched off and technician can like go to a

district with another machine and replace it

out because they are so easy to transport.

MR. WOODBRIDGE: If the public

counter is there, is there a private counter

functional somewhere in there.

2   MR. KERRIGAN: There is a life time

3   counter as well called protective counter.

4   But all that's displayed on the screen right

5   now is the opening flat screen is we have the

6   name of the election the polling location so

7   you can always verify that make sure the

8   machine is in the right way public count and

9   then on the right side we have the time and

10   date as well as the status of the power which

11   is right now plugged in, so you can also

12   verify, okay, I am on DC power. I need to

13   check maybe flip a light switch to get that

14   socket whatever the case may be.

15   MR. WESLEY: Let me backtrack a

16   little bit. I don't know if he is going to

17   get into it I'm going to jump in. He talked

18   about the TRC the triple redundancy check one

19   of the issues I face a lot of places we're

20   installing how do we know our vote how do we

21   know the machine is working. It is very

22   important because it is a bit of functionality

23   that's performed at the beginning you activate

24   a ballot where it actually does a comparison

25   of the records that is on each one of the

2   chips those three internal memory chips and it

3   ensures that they are equal at the start of a

4   ballot when a ballot is after the voter

5   completes it and push the vote button it goes

6   through that TRC again it does that is

7   sequentially before you see a screen on here

8   and it says thank you for voting. If before

9   that screen comes up it detects it did not

10   report the votes accurately to all three of

11   those memory locations it will shut down that

12   machine the importance of that is before the

13   voter leaves the precinct would notify him

14   that threes a problem were there machine,

15   notify poll worker and at that point it will

16   actually tell you on the screen it will close

17   down this machine and tell you which one of

18   the chips contains the total record and you

19   can actually take that voter to another

20   machine before they leave the precinct which

21   is very important feature on this electronic

22   it assures you would never lose a vote.

23   MS. MULDER: I'm sorry, it tells if

24   you the chip didn't record your vote.

25   MR. WESLEY: Yes, it will tell them

2 that they need to contact the poll worker or

3 election official because there is a

4 malfunction on this machine. So it gets their

5 attention poll worker looks a the screen, he

6 can then take them to another terminal so they

7 could cast their ballot prior to leaving the

8 precinct.

9   MS. MULDER: This is after the test

10 that said they each were making duplicate

11 records.

12   MR. PEARSON: Yes, it is. A

13 hardware failure can occur at any time with

14 any electronic equipment it's got the test

15 before the session starts during the session

16 as the votes are being written it also

17 validates they were written successfully and

18 that they are all functioning properly. So at

19 any point if it detects a hardware failure it

20 will notify and protect.

21   MR. WESLEY: And the importance of

22 that is it's important for us that we notify

23 the voter and the poll official before that

24 voter leaves that precinct because we're

25 protecting the vote for that individual.

2   MS. MULDER: Let's pretend it is

3   some other vendor machine and they have a

4   software glitch you guys don't have. If the

5   software had that glitch and it recorded the

6   wrong person but it did so accurately in three

7   places, does this machine tell you that, does

8   it is there any way for it to know that.

9   MR. WESLEY: I can let Sussex

10   respond to this as well, local procedure you

11   always perform what's called a logic and

12   accuracy report. The purpose for that

13   pre-election prior to you casting any votes on

14   this machine if I vote for John Doe, that vote

15   is recorded for John Doe and you perform that

16   that is a requirement and good procedure. And

17   and I think a good example of this would be

18   the way we explain it and I think this may

19   address your question. If someone were to try

20   to hack it and they were to somehow write one

21   of the chips the other two chips would say I

22   have 50 votes, I have 50 votes, I have 51

23   votes I have a problem, I need to should down.

24   MS. MULDER: I was assuming the

25   hacker would hack the software and then the

2   identical information would go everywhere but

3   it would be wrong and and I don't know how you

4   do that.

5   MR. WESLEY: You would have to gain

6   access to the machine. You would have to have

7   the encrypted election key.

8   MS. KLUSKA: The people that sign in

9   the box in their roster books and their voting

10   authority slips that total would be the right

11   total.

12   MS. MULDER: It would be the right

13   total the only way to do it would have to be

14   in-house some other vendor.

15   MR. WESLEY: That's the reason we do

16   the program. Its critical that you perform a

17   logic and accuracy test to ensure those type

18   of scenarios aren't taking place. I've

19   attempted with individuals that say how do we

20   know it got it, it doesn't kick in I will

21   change the time on the machine and let's run

22   this logic and accuracy again just to show you

23   that's the purpose for a public logic and

24   accuracy test to enhance the competency of the

25   voter to ensure they are all being recorded

2   properly.

3   MS. McCABE: We set our machines

4   ahead to election day to make sure there are

5   no easter eggs.

6   MR. PEARSON: And then you seal once

7   you complete, then everything is sealed.

8   MS. McCABE: And and may interject

9   this as well. One of the things we kind of do

10   unique to Sussex county after we do our logic

11   and accuracy test, we do manually by hand to

12   prove votes aren't being switched up or down

13   or all around we print a zero total from each

14   machine and that zero total is proof not just

15   visually but also from the machine it's

16   completely empty before the poll workers and

17   when they open it they also verify everything

18   that we've said with ballot control logs.

19   MS. MULDER: So the only recording

20   issue that comes up on this is the one where

21   there's a hardware failure to that that you

22   described.

23   MR. WESLEY: If it were to occur.

24   MR. KERRIGAN: That's if we check in

25   the CRC.

2   MS. McCABE: That is a VVPAT system

3   correct the triple redundant.

4   THE COURT: We may want to move this

5   along.

6   MR. KERRIGAN: I think we've covered

7   everything. Why don't we go back.

8   MR. WOODBRIDGE: This is a little

9   bit different than our usual procedure and I

10   am trying to do something slightly out of

11   order but I think it's going to be for the

12   benefit and I'm going to ask Mitchell Darer if

13   he wouldn't mind hearing from the New Jersey

14   Department of Disabled -- I can't remember the

15   exact name, it's easy to take him on first

16   because he is out of state for the rest of the

17   time. David, if you wouldn't mind giving us

18   your thoughts on this machine?

19   MR. MILLSTEIN: Good morning. My

20   name is David Millstein. I am the state ADA

21   administrator with the Department of Treasury.

22   The purpose for this discussion is on the

23   accessibility of the iVotronic voting machine.

24   This system is a stand alone, sits on a tripod

25   with a viewing screen that is touch sensitive

2   with the ability to allow a person who is

3   blind or visually impaired to follow

4   instructions using a four button system to

5   make a selection for voting purposes. For the

6   purpose of my evaluation, accessibility is for

7   under Title Two of the American for

8   Disabilities Act. The opening of the machine

9   is wheelchair accessible and has an opening of

10   45 inches which then goes down to a 36-inch

11   opening which allows the user to pull directly

12   in front of the machine. The forward reach

13   gives the user the ability to utilize a touch

14   sensitive screen with the final button to

15   tabulate the user's vote at 51 inches in

16   height. The machine has the ability to both

17   visual users and persons with visual

18   impairments utilizing the audio input for a

19   person who is blind or visually impaired. The

20   voter uses a headset. Each of the

21   instructions as well as the ballot itself is

22   done in real time voice prerecorded. The

23   machine does not use any type of voice

24   synthesizer. Each selection is then repeated

25   to the user along with the paper trail that is

2 printed out and based upon my recommendations,

3 the machine also has the ability for font

4 size, color contrast, black and white

5 background, can be utilized by all users and I

6 would accept this machine as a usable machine

7 for a person with a disability.

8   MR. WOODBRIDGE: Thank you, David.

9 Last time you were here you also indicated you

10 that you had at the facilities another test

11 machine. Did you bring that here at this

12 time?

13   MR. MILLSTEIN: No, I did not with

14 Marilyn Rosenthal who I brought with me who

15 was visually impaired and blind, she showed me

16 what she was actually looking for. I did the

17 process and the test this morning as a person

18 who was visually impaired. So I did do the

19 machine, voted on the machine as a visually

20 blind person utilizing the audio input.

21   MR. WOODBRIDGE: And you are

22 satisfied it meets the requirements with

23 regard to disability?

24   MR. MILLSTEIN: That is correct, I

25 am.

44

2   MR. WOODBRIDGE: Thank you.

3   Mr. Millstein is kind enough to do this during

4   a busy day. I don't usually do this, if

5   anyone has any questions on the disability

6   issue perhaps you may want to phrase them now.

7   If not, David, thank you very much.

8   MS. McCABE: If I may.

9   Mr. Millstein, the comments that you just made

10   about the usability of the machine applies to

11   the iVotronic itself?

12   MR. MILLSTEIN: That is correct.

13   MS. McCABE: And not the paper

14   trail.

15   MR. MILLSTEIN: I'm simply going by

16   the iVotronic, the hardware and the software

17   part of the machine.

18   MS. McCABE: Thank you.

19   MR. WOODBRIDGE: Any other

20   questions? Thank you again, David. Good to

21   see you.

22   MR. MILLSTEIN: Thank you.

23   MR. WOODBRIDGE: Mitch, would you

24   please be so kind to introduce your crew and

25   give us your report. Mitch Darer from New

2   Jersey Institute of Technology.

3   MR. DARER: Thank you. Good

4   morning, thank you for this opportunity to

5   discuss our project and report. I'm Mitchell,

6   M-I-T-C-H-E-L-L Darer, D-A-R-E-R, executive

7   director of NJIT Center for Informational

8   Technology. I'll provide an overview,

9   professor Ari Jain will provide the test, the

10   sample sizes and balance scenarios and Nirwan

11   Ansari will discuss the specific findings for

12   this machine under examination today.

13   After the criteria was issued in

14   May, the Attorney General's Office asked NJIT

15   to develop and conduct testing to evaluate

16   certain machines against the criteria. The

17   requirements addressed design, procedures

18   usability security, reliability and these

19   formed the performance criteria used in our

20   test. Some are qualitative and subjective

21   such as "allow the voter to easily review his

22   or her paper record" and others are

23   quantitative matters of fact such as shall not

24   externally communicate with any system. Each

25   of almost 70 individual requirements in the

2   criteria was subjected of up to four different

3   types of tests. Twelve exceptions defined as

4   a situation where in testing against the

5   criteria did not completely or did not clearly

6   near the requirement expected results were

7   reported. The project team included senior

8   faculty and staff with extensive experience

9   and information technology cyber securities

10   and statistical analysis. The secure lab was

11   established to design and perform the testing

12   and to house all vendor items. The vendors

13   supplied machines, documentation and other

14   peripheral equipment such as barcode reader

15   and audio components, vendor staff was very

16   level in explaining machine operations and

17   procedures and answering technical questions

18   although they were not present at or involved

19   in the actual testing, nor did the attorney

20   general's office influence or participate in

21   the testing. The team spent thousands of

22   hours over two months on this project

23   scientifically and objectively evaluating and

24   documenting the machines performance against

25   the criteria. We also documented the

2   configurations and versions of the NJIT tested

3   machines versus the ITA tested machines. To

4   support the testing sample ballot scenarios

5   were developed, four different test procedures

6   as I mentioned were designed and used to

7   evaluate different elements of the performed

8   criteria and for different reasons. The four

9   tests on the single test and three volume

10   tests, the 1200 vote test, the 14 hour test

11   and the 52 vote test.

12   Now I would like to introduce

13   Professor Ari Jain to discuss the test balance

14   scenarios and tallies.

15   MR. WOODBRIDGE: Thank you, Mr.

16   Darer. Welcome back Dr. Jain, good to have

17   you here.

18   MR. JAIN: Good morning and thank

19   you. I'm professor Ari Jain, a senior

20   University lecturer in NJIT division of

21   mathematical sciences. As Mitch mentioned

22   I'll describe the tests, the sample sizes, the

23   ballots, the scenarios and four types of

24   tallies.

25   We developed four test procedures;

2   the single test, the 1200 vote test, the 14

3   hour test and the 52 vote test. The single

4   test is a one time examination, inspection or

5   review of equipment, operations and random

6   documentation. It includes a physical

7   inspection of various components of the DRE

8   and the VVPR voting system as well as an

9   examination and comparison of paper records,

10   electronic records and barcodes. There are

11   three volume tests a 1200 vote test, a 14 hour

12   test and a 52 vote test. We use two ballots a

13   long ballot with 19 items and a short ballot

14   with nine items. Both of these ballots are

15   displayed in the ESS machines here, Kevin gave

16   his demonstration by using the long ballot.

17   We used 12 voting scenarios for each ballot.

18   Eight scenarios are completely balanced with

19   respect to the two parties for various

20   positions and the yes no votes for several

21   questions. These 12 scenarios are

22   representative of over a million possible

23   scenarios that you can have. In addition, we

24   had four scenarios that focused on testing,

25   writings and undervotes. The 14 hour emulates

2   actual physical voting situations over a total

3   time period of 14 hours representing entire

4   election day in any of our counties. Mark

5   voters were recruited to cast various

6   scenarios, this test resulted in about 300

7   votes for the ESS machine. Immediately

8   afterwards we asked these marked voters to

9   answer some questions about their experience

10   with the reviewing, changing and accepting

11   their votes. The 1200 votes simulated test

12   generates votes continuously based on a short

13   ballot. The ballot that is on the other

14   machine in a scripted program which is set up

15   electronically. However, since the ESS

16   machine did not have the script capability, we

17   ran this test by doing a manual test. A

18   number of votes, the 1200 votes is chosen to

19   exceed the guideline limit of one machine for

20   750 registered voters resulting in paper

21   records, electronic records, closed poll

22   reports and the barcodes we examined and

23   compared them. The 52 vote test is designed

24   to check the multiple page ballot which is not

25   applicable to the ESS machine because it has a

2   roll of paper. We obtained four sets of

3   tallies derived from the counts of paper

4   records, scanned paper records, closed poll

5   reports and the electronic records. In case

6   of the 14 hour test and the 1200 vote test, a

7   few paper ballots were not printed because of

8   paper jams. Therefore, we could not compare

9   all four counts, all four tallies. We were

10   able to compare the paper records with the

11   scanned paper records and they match

12   perfectly. Similarly, we were able to tally

13   the closed poll reports with the electronic

14   records and they matched perfectly. Thank

15   you.

16   MR. WOODBRIDGE: Thank you. Can I

17   ask you one question. The procedures that you

18   used with this machine ES&S were the

19   procedures the same as procedures used just

20   last July to with the Cusakoia and the Deboney

21   machines?

22   MR. JAIN: Yes, they were identical

23   machines.

24   MR. WOODBRIDGE: Thank you.

25   Dr. Ansari, I think you're up next.

2   MR. ANSARI: Good morning and thank

3 you. I am Nirwan, N-I-R-W-A-N, Ansari,

4 A-N-S-A-R-I. I am a professor of electrical

5 and computer engineering at NJIT. And since

6 the ES&S an electronic and retail machine that

7 is quite different from the previous machines

8 we have tested. So let me first describe the

9 characteristics of these machine. Actually

10 Kevin described it pretty nicely. So this

11 uses a design we refer to as real time audit

12 log system. In which each voter selection is

13 printed as the voter makes each selection on

14 the DRE routed and after the voter makes all

15 his selections in all contacts on the DRE each

16 transaction selected, deselected or changed is

17 printed immediately after the choice is made.

18 It was demonstrated I think by Kevin earlier

19 so undervotes are not indicated at this point

20 on the paper record. A change or deselection

21 of any prior choice can be made at any time

22 before the vote button as you can see on the

23 machine is pressed. So the voter has

24 unlimited opportunities to change a vote,

25 selection and review the printout one by one

2   of an individual selection before the vote

3   button is pressed. However, the ballot with

4   all the contact selections including

5   undervotes is printed only after the vote

6   button is pressed. So at that point the voter

7   does not have an opportunity to reject the

8   final print up of the ballot. So, according

9   to the criteria and the voter verified paper

10   record called the VVPR or the paper record is

11   defined in section one as follows. It is

12   physical piece of paper on which the voter's

13   ballot choices are recorded cast and preserved

14   for later use in any recount manual audit. So

15   for testing purposes this definition is

16   integrated as referring to the entirety of the

17   print out of the paper vote on the voting

18   session of a voter. The cast ballot point on

19   the paper route which cannot be rejected is

20   referred to as the vote summary. This vote

21   summary is electronically saved in the text

22   format referred to as the voter image which is

23   essentially referred to in the criteria the

24   New Jersey criteria as the electronic record

25   or the electronic voter ballot and official

2   ballot of the voter. So, having integrated

3   had the paper record, let me briefly go over

4   the 12 exceptions in which the machine fails

5   to comply with the test criteria and each

6   exception refers to every criteria cited in

7   the report. So briefly for exception once

8   it's related to the facilitation of reviewing

9   accepting and rejecting paper records. So for

10   this exception one there's only one paper

11   record printed per voter. The vote does not

12   have opportunities to recast the ballot up to

13   two additional times as required by the

14   criteria. And the voter has unlimited

15   opportunities to review each individual line

16   as it is printed immediately after each

17   selection, deselection or change. However,

18   the undervotes are not printed in that line by

19   line printing following individual selection,

20   deselection or changes and therefore the voter

21   cannot see or review the undervotes at that

22   time on the print out. The voter can then

23   completely review the completed ballot on the

24   screen on the DRE screen. If acceptable,

25   press the vote button on top of the DRE screen

54

2   that cause the ballot to be cast then the vote

3   summary showing the entire ballots, entire

4   ballot cast is then printed on the paper

5   record but it's not reviewable by the voter

6   since it rapidly advances to the print out

7   spindle. Even if the voter were able to read

8   the vote summary in that short period of time

9   there is no mechanism for the voter to reject

10   the voter record at that time and recast the

11   ballot. Exception number two is essentially

12   related to the secrecy of all votes cast. As

13   you can see from the machine there are two

14   side panels, but by themselves they do not

15   provide privacy. An observer may be able to

16   read the screen or by standing behind or next

17   to the voter. Exception number three is

18   related to voter privacy. Once the voter

19   presses the vote button to cast the ballot,

20   the printer prints out the vote summary with

21   the exact date and time of the voting session

22   on the paper record. So if hypothetically if

23   this time stamped information is compared to

24   the poll log which records the time when the

25   voter checks in, it is possible that the

2   record could be matched to the voter therefore

3   compromising the voter privacy. Exception

4   four is related to the provision of 750 voters

5   per machine. The paper replacement is

6   expected for an election with more than 120

7   votes. In our experience it ranges from 117

8   votes to 135 votes in all the tests that we

9   did. Each selection, deselection or change

10   generates one or two lines of prints plus

11   blank space approximately four lines and also

12   there are about four by nine inch blank space

13   to run for the privacy purpose. Exception

14   four is related to security of various

15   components of VVPRS. The roll of printer

16   paper is accessible upon unlocking the printer

17   cover but at that time the paper records

18   accessible. The cable connecting the VVPRS to

19   the DRE is exposed and can be easily

20   disconnected from the printer port on top of

21   the DRE. Exception four is related --

22   MR. WOODBRIDGE: May I interrupt you

23   one moment. The cable on the top, is that a

24   power cable or is that a printer cable?

25   MR. ANSARI: That is a printer

2   cable.

3   MR. WOODBRIDGE: There are two

4   cables, okay, I got you.

5   MR. ANSARI: Exception number six is

6   related to this low paper indicator. So if

7   the amount of paper reaches the amount of

8   limited limit during the voter session the DRE

9   does not give the voter opportunity to finish

10   the voting and the DRE automatically voids

11   that vote; that is the system cancels the

12   selections and lock the system and the voter

13   has to restart the voter session. And one of

14   the criteria require that you need to allow

15   the voter to finish the vote in the middle of

16   the voting. Exception number four, number

17   seven concerns about the font size. We tried

18   and we demonstrate the VPRs cannot show the

19   font rate 6.3 to 9 millimeter. The maximum

20   size we tried that we can see using the

21   magnification device supplied by the vender is

22   in the range to three to five millimeter

23   range. Exception eight pertains to the

24   linkage between the electronic image records

25   and paper records. While the documents

2   doesn't provide us the procedure how to

3   reconcile the electronic ballot records with

4   the paper record, however we find out that the

5   electronic ballot image records are saved in

6   ascending order of the election identification

7   number. This is a memory address pointer

8   referred by the vendor that the EIN is printed

9   on the paper record and contained on the back

10   of the record, therefore the EIN is the

11   linkage of the electronic ballot image record

12   to the corresponding paper record. However,

13   matching it the to the corresponding paper

14   records is quite difficult if you have a large

15   volume of votes and we can elaborate on that

16   later on and it is possible only if no paper

17   records are lost. If there is a paper record

18   is lost there could be a mismatch. Exception

19   number nine is related to printer malfunction

20   such as paper jams, so neither the DRE nor the

21   VVPRS can detect a paper jam. When the paper

22   jam occurs, the voter can still make or change

23   selection on the DRE and cast the ballot as

24   normal. However, the printer keeps printing

25   on the same area on the paper roll making it

2   illegible. No audio or visual warning system

3   is given to either the voter or the poll

4   official when there is a paper jam. The vote

5   is electronically recorded and counted. The

6   paper jams with respect observed in both

7   single test and two voting test. One paper

8   jam during the 14 hour test even resulted in

9   paper torn apart in which selections are

10   backwards or not printed. Exception number

11   ten concerns the cable disconnection. If the

12   printer cable is connected after the voter

13   presses the vote button, the ballot is

14   electronically recorded and counted in the

15   closing poll report. Because the cable is

16   disconnected so there's no printing. No back

17   up is printed on the and the cancellation is

18   indicated on the DRE screen and even lock

19   report. Exception eleven and 12 are some

20   miscellaneous exceptions not really associated

21   with any of the particular criteria. These

22   are just our observations. Exception 11

23   stated that a person who possesses a

24   supervisor PEB can activate a ballot in a few

25   seconds without any cross-checking with the

2 poll log so using a supervisor PEB any person

3 can cast as many ballots as he or she wants.

4 Exception 12 I think is related to the

5 operations. I think during the volunteers

6 after approximately 250 votes has been casted

7 the DRE produces a warning message. When the

8 same supervisor PEB was once again instructed

9 to activate the subsequent ballots. This

10 warning message continued for subsequent

11 votes. While this warning does not preclude

12 the voter from voting, the even lock shows a

13 warning message that was not understandable.

14 We can elaborate on that a little more.

15 That's all I have to report at this point.

16 Thank you very much. Very, very good detailed

17 report. For the record I should indicate that

18 this report was furnished to the vendor. The

19 vendor has supplied to the committee its

20 response to these issues that were raised by

21 NJIT and the easiest way to address, to deal

22 with it is address each of these concerns or

23 exceptions raised by NJIT raised to a specific

24 portion of the statute, we walk through the

25 statute that's the best opportunity for the

2   vendor to respond and people to elaborate as

3   case may be.

4   Just a matter of housekeeping, in

5   addition to that response from the vendor to

6   the NJIT report, the committee was furnished

7   with a comprehensive collection of documents

8   that were included in a seven, or summarized

9   in a seven page fax to me from the Attorney

10   General's Office. I'm going to Karen Dumars

11   if she wouldn't perhaps be kind enough to

12   provide an extra copy to the court reporter of

13   this document. I'd give her mine, but my is

14   too well annotated and too well covered to

15   give an official record so that pretty much

16   summarizes it. We have two large boxes of

17   materials that have changed the characteristic

18   of my SUV. I'm not saying they weren't

19   interesting material. As a matter of fact I

20   would probably go on to say this is one of the

21   most comprehensive thoroughly documented

22   hearings that we've had the pleasure of

23   presiding over. So if that could go in the

24   record and you get that from Karen.

25   I've also asked Mitch if he would

2   kindly give us a list of the people who are

3   attending so that we could put that in the

4   record too. With no further ado we're going

5   to try to take a break around 12 for a one

6   hour lunch period and then come back and

7   finish our job. Since we are moving along

8   pretty smoothly, I'm to go to start with the

9   going through the statute, not the statute,

10   but the criteria. What we do is we literally

11   take each section, each relevant section of

12   the criteria and read it out loud and then

13   where necessary ask for responses from the

14   vendor. The statute we're reading from is

15   keyed into NJIT exception, so we could deal

16   with the exceptions and go through the

17   criteria. So the committee is ready, we'll do

18   that for the next few minutes and then around

19   12:00 o'clock we will take an one hour break

20   for lunch.

21   There are portions of the criteria

22   that really aren't relevant to the machine, I

23   will point those out as we go along. So, if

24   the committee -- and what we're working from

25   by the way is the material from last July it's

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2   entitled, State of New Jersey Criteria for

3   Voter-Verified Paper Record for Direct

4   Recording Electronic Voting Machines and it's

5   I guess about 13 pages long. The first page

6   is definitions and beginning at the top of the

7   second page is more definitions and then the

8   part that we start in the substantive elements

9   related to the machines in question begin on

10   page two, Section B operation. So we're going

11   to begin with that. And the operation -- and

12   I'll provide a copy to you, Kim of what I'm

13   reading so you can duplicate the corrections

14   on it. And what is also convenient for us is

15   NJIT's report keys in not only to the sections

16   by a number of the text, so you can follow

17   along exactly what we're dealing with.

18   B. Operation. Paragraph number

19   one. The VVPRS are designed in various

20   configurations. In all configurations, prior

21   to casting the ballot, the voter shall have

22   the ability to verify his or her selections on

23   a paper record and in a private and

24   independent manner. This was noted as one of

25   the exceptions, exception number two in the

2   NJIT report and the comment there and

3   exception number two comes up in three other

4   locations, the relevant comment there is

5   quote, "Two side panels exist, but by

6   themselves they do not provide privacy. An

7   observer may be able to read the screen or

8   Paper Record Display Unit by standing behind

9   or next to the voter." And I ask the vendor

10   if they have any response to that.

11   MR. KERRIGANIGAN: This is Kevin

12   Kerrigan. As we noted in our responses and in

13   our briefs that I provided earlier, we do have

14   the doors of the booth itself which provide

15   protection from the side, and there are some

16   administrative procedures in polling places

17   set up that would ensure voter privacy as well

18   as the standard practice which prevents

19   loitering around the voting station whether

20   that's paper or DRE solution being

21   implemented. So the combination of the booth

22   set up itself which would protect a voter from

23   the site as well as how you set up the section

24   itself. I believe I mentioned it would be

25   rotated 180 degrees the way we have it set up

2   here today, so the voter's back is to the wall

3   preventing anybody who come from behind. As

4   far as the voters using an audio ballot, when

5   the audio ballot is enabled, the screen does

6   go blank as well Wesley mentioned there will

7   be local procedures of how to protect the

8   privacy of the real time audit log when an

9   audio ballot is being used.

10   MR. PEARSON: This is Steve Pearson.

11   One thing we did not demonstrate is the

12   flexibility of the wings. They are intended

13   and by design to provide privacy. They pull

14   in right up to surround the voter if they

15   choose to. So when you're standing in front

16   of the terminal, you bring the wings in tight

17   and it's also if the systems are set up in a

18   manner that they are protected so people

19   aren't walking or loitering and there is

20   traffic behind them, we believe it provides

21   sufficient privacy.

22   MR. WESLEY: Steve, could I also add

23   this has been an issue that has been kind of

24   ongoing and we've been doing some additional

25   research to try to find ways in spite of the

2   things they said we recommend you do, some

3   folks still are looking for additional

4   security. So this is actually a device if

5   anyone wants to try this on the touch screen

6   we're doing the research on that will polarize

7   and only allow you to look in one direction if

8   you get a voter that is concerned about

9   privacy or someone loitering around the area

10   you can lay this on the screen and if you want

11   to try it, you're more than welcome. It will

12   only allow you to view what's on the ballot if

13   you're directly standing over it so that is an

14   option.

15   MR. WOODBRIDGE: I'm going to ask

16   Marge McCabe, what's your experience with

17   this?

18   MS. McCABE: I have a few issues

19   that pertain primarily to handicap voters.

20   The way that our machines are now designed the

21   booths that they sit in, the machines

22   themselves the iVotronic as you can see are

23   about the size and weight of a laptop

24   computer. If a handicapped voter comes in in

25   a wheelchair or a voter is unable to lift his

2   or her arms to reach the screen, that unit can

3   be unplugged and brought to a table and the

4   voter can sit at the table with a privacy

5   screen and can vote. There are no issues of

6   anyone seeing how they voted at this point. I

7   have a major concern about visually impaired

8   voters and their privacy being compromised

9   with any kind of printer not just in one, but

10   any of the VVPATS that are proposed. I really

11   think that this for a security reason so, and

12   one other big issue if a paper jams and a

13   voter has to call a poll worker over for

14   assistance, the voter's choices are readily

15   viewable on the paper not just were this but

16   with any paper trail that compromises their

17   privacy as well.

18   MR. WOODBRIDGE: That's not peculiar

19   to this machine.

20   MS. McCABE: That's all of them.

21   MR. WOODBRIDGE: Is it possible to

22   add curtains if anyone wanted to?

23   MR. PEARSON: Yes.

24   MS. KLUSKA: If someone were to walk

25   up and help as a poll worker would, those

2   voter selections would be visible.

3   MR. KERRIGANIGAN: It's an error

4   that occurs. The screen would not be showing,

5   they would be prompting something with regard

6   to the error whether there's a printing

7   malfunction or whatever the case may be, the

8   voter privacy wouldn't be prohibited by it or

9   compromised by the terminal but she is correct

10   with our real time audit log you're going to

11   have that line of any selection made the

12   ballot is an impasse, somebody viewing those

13   selections, those current selections have no

14   way of knowing whether it is the final intent.

15   MR. WOODBRIDGE: Even with the

16   mechanical sheet someone needs some assistance

17   with the CLC.

18   MS. McCABE: That's what's stated if

19   there is a mechanical problem the machine goes

20   blank.

21   MR. WOODBRIDGE: If somebody had a

22   problem with the old fashion machine, they

23   came and they would be able to see.

24   MS. McCABE: We don't deal with

25   those. That's why we went to this.

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2   MR. KERRIGANIGAN: Another

3   distinction with her current system they are

4   able to remove the unit and you can have

5   what's referred to as curbside voting or in

6   the lab voting with this unit and with it

7   requiring a decast solution that is no longer

8   possible with this solution because as we

9   mentioned if you disconnect the printer the

10   machine shuts down for security purposes. We

11   don't allow any voting to occur without an

12   audit trail, a paper audit trial being

13   produced. So by this legislation being

14   adopted you've eliminated the possibility of

15   disconnecting the unit from the printer.

16   MR. GREENHALGH: Gary Greenhalgh

17   ES&S. In the approximate six elections that

18   you've run in the iVotronic, have there been

19   any real concern with the privacy of the

20   iVotronic?

21   MS. McCABE: Never.

22   MR. GREENHALGH: Good.

23   MR. WOODBRIDGE: Any other

24   questions, thank you. Do you have any

25   comments or opinions, okay. B. 2. The VVPRS

2   shall be designed to allow the voter to easily

3   review, accept, or reject his or her paper

4   record. Section a. The DRE shall not record

5   the electronic record until the paper record

6   has been approved by the voter. This was

7   noted both of these were noted under section

8   number one on the NJIT report. Comment for

9   the record, Only one paper record (vote

10   summary)is printed per voter. The voter does

11   not have the opportunities to recast ballot up

12   to two additional times as required by the

13   Criteria. The voter has unlimited

14   opportunities to review each individual line

15   as it is printed immediately after each

16   selection, deselection of change. However,

17   undervotes are not printed in that

18   line-by-line printing following the individual

19   selections, deselections or changes, and

20   therefore the voter cannot see or review

21   undervotes at that point on the printout. And

22   last part, the voter can then completely

23   review the completed ballot on the screen and,

24   if acceptable, press the "VOTE" button on top

25   of the DRE screen, causing the ballot to be

2   cast. The vote summary showing the entire

3   ballot cast is then printed on the paper

4   record, but is not reviewable by the voter,

5   since it rapidly advances to the "take-up"

6   spindle. Even if the voter were able to read

7   the voter summary in that short period of

8   time, there's no mechanism for the voter to

9   reject the paper record and to recast the

10   ballot.

11   MR. KERRIGANIGAN: I think at this

12   point it would be appropriate to make a note

13   or an issue I have with the formality of this

14   test report and I noted this in my exceptions

15   and I'm not trying to be difficult or

16   anything, but it's kind of specific here. I

17   did note an exception, there are eight

18   criteria references and we have three bullet

19   points speaking to them and I would argue and

20   I believe everybody would agree that not all

21   of these listed in the exceptions these

22   criteria points do they truly have exceptions

23   with our system and I'm not sure as to why all

24   eight are listed when it seems the three

25   bullet points that are noting what the

2 exception is seems specific to three

3 particular criteria points. So I'm just

4 worried about the interpretation if someone

5 wants to look at this report and they see

6 eight criteria references and if they add up

7 and the exceptions it would maybe exaggerate

8 the number of criteria that they have

9 exception to. But what I can do is respond --

10   MR. WOODBRIDGE: Comments.

11   MR. KERRIGANIGAN: What I can do is

12 respond to each of the bullets in the first

13 one which is in reference to the RTAL

14 accepting or rejecting the ballots. You've

15 actually explained this the first time, with

16 this type of system there's no need for the

17 recast the ballot. You have unlimited

18 opportunities to change or make selections or

19 deselections. I guess I can just read

20 verbatim what I've previously submitted that

21 the voter does have the opportunity to review,

22 accept or reject each of their selections

23 throughout the entire voting session. Once a

24 voter has made all their selections, they do

25 enter into a review screen that is noted on

2   the printing log as well and they are then

3   also in that session able to make a number of

4   selections and deselections and all random

5   choices they have made and all these actions

6   are noted on the real time audit log. There

7   is a vote summary at the end which is used for

8   auditing purposes, not necessarily for voting

9   review. We feel that with the way we design

10   our system being a real time audit log we have

11   a designed which provides verification to the

12   voter, provides immediate feedback with

13   immediate action. They are given an

14   opportunity at the end, well actually not an

15   opportunity, its a requirement, our system

16   requires them to review all their selections

17   at end before we allow them to cast the

18   ballot.

19   MR. WOODBRIDGE: The selection goes

20   on the paper or selection goes on the screen.

21   MR. KERRIGANIGAN: Both.

22   Verification of any action and the action is

23   recorded on the paper trail.

24   MR. WOODBRIDGE: How much time do

25   they have to review the summary.

2   MR. KERRIGANIGAN: We do not have a

3   time out. We do not limit the time to a

4   voting session for a voter.

5   MR. WOODBRIDGE: So the voter gets

6   to the end of the vote and is satisfied with

7   the vote, how long do they have to read the

8   summary that the paper trail represents.

9   MR. KERRIGANIGAN: Our machine will

10   not itself discontinue the voting session due

11   to voter inactivity, but what we do have in

12   place we do have a voter I believe it's

13   preprogrammed for three minutes of voter

14   inactivity the machine will begin to chirp

15   audible enough for a voter to hear, the voter

16   will notify that interaction is required by

17   that machine. This could be the case if the

18   machine is abandoned, so at that point the

19   machine would be blank and it would be

20   chirping. The poll worker would insert their

21   PEB and that will take them to a vote cast or

22   cancel. If they select cancel, they will be

23   prompted why they are cancelling the ballot

24   and the ballot would be cancelled and that

25   will be noted to the real time audit log. So

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2   it would be up to legislation on how to handle

3   abandoned ballots whether they are to be cast

4   or cancelled. I'm actually not familiar with

5   New Jersey law, with the procedures.

6   MR. FLEMMING: John Flemming. I

7   think I can answer your question. The

8   printer, you are not able to review at all I

9   think that's what he is asking, the actual

10   summary of the print out, how long does the

11   voter have to review that, the answer to that

12   would be none because it's just scrolling,

13   right?

14   MR. KERRIGANIGAN: The vote screen

15   they only have the time for it to go by. It's

16   not for voter registration purposes.

17   MR. WOODBRIDGE: You press a red

18   button and it scrolls up and disappears.

19   MR. PEARSON: The opportunity to

20   review your ballot before it is cast is on the

21   summary screen as well as any selection or

22   action you've taken on the real time basis

23   with the printer itself.

24   MR. WOODBRIDGE: Could you adjust,

25   for the record, could you adjust the well

2   behind the data summary system to look at

3   that.

4   MR. PEARSON: The system was

5   designed to emulate someone voting with paper

6   or any other device. There is no time

7   limitation. Everybody votes at different

8   speeds and different capabilities with that,

9   so we did not want to put on any restrictions

10   to restrict any type of voter. This would be

11   using the system just like you would with a

12   paper system.

13   MR. MAHONEY: If the attorney

14   general says that the voter has to be able to

15   see the votes in its entirety before it cast

16   any votes, would it be possible for you guys

17   to alter your machines to do that and if it is

18   possible, how long would it take to do that?

19   MR. PEARSON: If I could rephrase

20   your question. What you're asking, we do

21   provide that capability on the summary screen

22   and on the screen itself. What you're asking

23   for us to do then would be to print the

24   summary and allow them the opportunity to

25   review the printed summary as well as what's

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2   on the visual summary.

3   MR. MAHONEY: And then cast their

4   vote if they are satisfied.

5   MR. PEARSON: And then cast their

6   vote. That is a feature that could be

7   implemented. It would require modification of

8   the system if that were the case.

9   MR. GREENHALGH: Gary Greenhalgh of

10   ES&S. The real problem we have there is the

11   length of the ballot because if the ballot is

12   beyond the size of that screen, you won't be

13   able to see the entire ballot beyond it. It's

14   all the function of the ballot that the voter

15   is voting on. Some of the states, I know West

16   Virginia has a very, very long ballot.

17   There's no way you could get the summary on

18   any printer because the thing would be about

19   eight feet long. That's the problem.

20   MS. McCABE: Marge McCabe, Sussex

21   County. I think the problem we have is not so

22   much with the machine as the legislation. At

23   least 18 of our counties have full faced

24   screens without a summary opportunity on the

25   DRE itself and the legislation I believe was

2   designed based on that criteria. No one came

3   to me and said, how does your machine work

4   before this legislation was passed.

5   MR. WOODBRIDGE: Keeping in mind

6   it's not the purpose of this committee to have

7   anything to do with criteria. As a matter of

8   fact, we really should try to keep our

9   distance from those issues.

10   MS. McCABE: I understand that, but

11   we do have a summary --

12   MR. WOODBRIDGE: Okay.

13   MS. McCABE: -- that others do not

14   have.

15   MR. WOODBRIDGE: To address your

16   comment, Kevin, which was I think the number

17   of exceptions, we will cover 11 exceptions

18   here, so I think that's what people should key

19   on, not just on what NJIT has acquired, I

20   think that's how the committee looks at it

21   more than anything else. Mr. Darer, you have

22   a comment.

23   MR. DARER: When everybody else has

24   a chance I will try to conclude.

25   We're just specific specifically to

2   voter I'm specific to one and certainly

3   apologies if anything we've written isn't

4   exactly clear. First comment applies to all

5   the exceptions, every criteria section,

6   subsection cited has been not met by the

7   bullets below. It may not be a one-to-one

8   match in this case there are eight criteria

9   sections that have not been met by three of

10   the observations and findings that we have

11   below and here is why we feel why. There are

12   criteria in all these different places refers

13   to the voter has to have the opportunity to

14   review the paper record and to say, yup, it

15   reflects my vote should it or it doesn't, let

16   me try again. The paper record in the

17   criteria is defined as the piece of paper

18   where the choices are recorded cast and

19   preserved, so that's the summary. It's not

20   the ins and out or chicken scratches or the

21   pluses or minus that came before it and that

22   under that definition and our interpretation

23   of it the voter having to have the opportunity

24   to review the paper record, none of these

25   criteria sections are met and even if the

2   voter had three minutes to look at that last

3   summary there's no mechanism for rejecting and

4   voting again.

5   MR. WOODBRIDGE: Right.

6   MR. DARER: And the last, someone

7   mentioned what if it doesn't fit and that's

8   addressed in the criteria too, that capability

9   has to be there to handle if it takes multiple

10   windows or some mechanism to do that.

11   MR. WOODBRIDGE: While we have you

12   on the stand here, do you have any idea how

13   long a typical voter record is to a voter on a

14   machine like this?

15   MR. DARER: That's probably how we

16   got to the 120 votes off the length of the

17   roll. I'd have to do some math.

18   MR. WOODBRIDGE: We don't need the

19   answer right now.

20   MR. DARER: I do know and it's later

21   on --

22   MR. WOODBRIDGE: Two feet per order,

23   does that?

24   MR. DARER: Each selection,

25   deselection or change generates one line or

2   two lines of print, plus a blank space equal

3   to a few lines in there and then there is the

4   summary and we saw three barcodes come out. I

5   don't know what that comes to.

6   MR. WOODBRIDGE: Perhaps we will do

7   the math afterwards. This is a 300-foot roll,

8   you have 120 votes.

9   MR. DARER: 3600 inches.

10   MR. KERRIGANIGAN: The distinction

11   made here while on trying to determine that

12   number which is discussed, one you can't

13   determine voter activity. It's difficult to

14   determine that. We don't have a standard

15   receipt, it's a real time audit log. The

16   election sites can vary per election obviously

17   and that is going to alter your number when

18   trying to come up with the magic number per

19   voter as well as our programmable window

20   versus a nine inch window.

21   MR. WOODBRIDGE: You have a 300-foot

22   roll and help me out, you have 120 votes

23   average so you're talking over two feet of

24   paper per voter.

25   MR. DARER: I would agree with you,

2   but in theory and in our testing but it really

3   depends on the size of the ballot, if the

4   voter gets in and out, if there's lots of

5   changes, but it seems the impression one can

6   discuss what the number is but the impression

7   is it takes a lot of paper.

8   MR. WOODBRIDGE: Fair enough.

9   MR. PEARSON: This is Steve Pearson

10   and I do want to address the criteria of Title

11   3.0.9 which is III B. 2 where it states, If

12   the paper record cannot be viewed entirely in

13   the Display Unit at one time, referring to the

14   paper record display unit, the voter shall

15   have the opportunity to verify the entire

16   paper record prior to the electronic or paper

17   ballot being stored and recorded. NJIT has

18   cited this as a non compliant issue. We

19   interpret that as we are absolutely compliant

20   to that. Their interpretation, you have to

21   provide a summary and view the entire summary

22   but the language does not state that you have

23   to provide a summary. It states that if the

24   paper record cannot be viewed entirely and

25   Display Unit in this case with this device at

2   one time the voter shall have the opportunity

3   to verify the entire paper record prior to the

4   electronic or paper ballot being stored and

5   recorded.

6   MR. WOODBRIDGE: Absolutely. You're

7   ahead of where we are. We're actually going

8   through the statute rather than the NJIT

9   comments. We will get to that.

10   MR. PEARSON: That is kind of a

11   rebuttal. It lapses.

12   MR. DARER: I have some additional

13   information. Let's continue with this. The

14   first ballot, the printed ballot on this roll

15   is the short ballot with no changes or

16   deselections and it's 27 inches and it is

17   something to be looked at. The last point I

18   don't think got mentioned in the discussion of

19   the exception one was the fact about

20   undervotes. I don't think undervotes got

21   mentioned here.

22   MR. KERRIGANIGAN: That was the next

23   bullet point.

24   MR. DARER: We're not completely

25   done with one.

2   MR. WOODBRIDGE: We have two more

3   bullet points to deal with in regard to this.

4   It's a little bit complicated the way the we

5   will read the statute and each part of the

6   criteria and so these things may come up again

7   and your comments vis-a-vis the III B. 2. will

8   come up again at that stage. You want to

9   continue with your comments?

10   MR. KERRIGANIGAN: In my bullet

11   point two I believe is a later criteria.

12   We're not at the undervote section of the

13   criteria if I'm correct, are we on B.2.A.

14   THE COURT: We're on B.2 and B.2.A.

15   MR. KERRIGANIGAN: Which this does

16   not mention the undervotes, so I believe we

17   will address that later.

18   MR. WOODBRIDGE: Okay. And also

19   there's an issue on the third bullet too. You

20   want to take that up, discuss that? We talked

21   a little bit about the ability or inability

22   perhaps to read the summary.

23   MR. KERRIGANIGAN: It's kind of back

24   to what Steve was just mentioning. We feel

25   we're compliant to the language on the ability

2   for voter to review because we provide that

3   immediate verification as opposed to a design

4   and some of the legislation may seem a little

5   bit like it's worded toward the design of the

6   printers which is in reference to it being

7   viewed at the end which is allowed in the

8   verbiage of the criteria contract for reel to

9   reel. It doesn't work like that it's real

10   time verification of any selection. So, in

11   other words with the verbiage as written they

12   must be able to view everything before

13   casting. We are compliant because they have

14   been showing everything prior to being casted

15   plus multiple opportunity to change any

16   selections and again be provided paper

17   verification of that change.

18   MR. WOODBRIDGE: One point of

19   clarification. Do I understand correctly that

20   there are nine states that use this paper

21   trail system; is that correct?

22   MR. KERRIGANIGAN: Yes.

23   MR. PEARSON: We're certified in

24   nine states with real time audit log system.

25   MR. WOODBRIDGE: You say eight of

2   them had previously used --

3   MR. PEARSON: That's conjecture. I

4   believe there's eight. I don't recall. I

5   have to go back and see. Some of the states

6   have been implemented and used in election of

7   those nine.

8   MR. KERRIGANIGAN: This is the first

9   state level. It's certainly in federal

10   testing but this version of it is not

11   implemented anywhere.

12   MR. WOODBRIDGE: It's just about,

13   actually a little bit after twelve. Why don't

14   we take a break for an hour, reconvene here

15   let's make it five minutes after one and take

16   a break for lunch. Then we'll start up from

17   where we left off. We'll start up with

18   section B3.

19   MS. McCABE: If I may, we have a

20   hand out that we would like to give everyone

21   that just reviews our testing and validation.

22   MR. WOODBRIDGE: You can do that now

23   or if you wanted to give it out, you could

24   place it on the back table.

25   (At which time a luncheon recess was

2   taken.)

3   (Time noted: 12:05 p.m.)

4   - - -

5   A F T E R N O O N   S E S S I O N

6   (Time noted: 1:12 p.m.)

7   MR. WOODBRIDGE: We're going to go

8   back on the record. We have a special request

9   from an individual who wants to make a

10   comment. When she comes back, we'll take her.

11   Why don't we start where we had left off and I

12   believe, John, you had some comments on

13   section 2A before we get to section three.

14   MR. FLEMMING: I just want to make

15   sure I understand your position with 2 and 2A.

16   As it states that the VVPRS is designed to

17   easily review, reject his or her paper record

18   and I'm trying to understand where you see

19   that the voter does that?

20   MR. PEARSON: Let me catch up.

21   MR. WOODBRIDGE: We'll take you in a

22   minute.

23   MR. PEARSON: Could you repeat your

24   question.

25   MR. FLEMMING: Go to Criteria Two.

2   Based on what it states is the VVPRS shall be

3   designed to allow the voter to easily review,

4   accept or reject his or her paper record. And

5   I'm trying to find out where you believe that

6   that is accomplished in your implementation in

7   this. I can understand how it is

8   electronically, that makes all the sense. I'm

9   not sure, I want to make sure I'm not missing

10   something.

11   MR. PEARSON: There was specifically

12   with the real time audit log system the voters

13   provided to me.

14   MR. FLEMMING: For each vote never

15   or ever it will accept or reject, you don't

16   vote on, correct.

17   MR. PEARSON: Yes, they are. As

18   they go through and when they get to the

19   summary portion that is when they are given

20   the opportunity to ensure first of all we

21   ensure that they have seen all the races and

22   that's where they would have opportunity to

23   either choose to go back in and modify or

24   elect to not vote.

25   MR. FLEMMING: Electronically I

2   could see that you do a good job in that, but

3   the way it's written I want to know, you could

4   do that paper, think of it as two separate --

5   MR. PEARSON: Which specific

6   criteria are you referring to. 2.09 is that

7   the criteria sheet that we're working, through

8   or.

9   MR. WOODBRIDGE: I think

10   Mr. Flemming is going back to section B.2.A.

11   MR. PEARSON: 2.B.2.

12   MR. FLEMMING: 2.B.2, yes. Actually

13   I was reading two.

14   MR. PEARSON: Are we working from

15   this sheet?

16   MR. FLEMMING: I'm working from the

17   criteria sheet. My argument was on that, is

18   there a provision in this statute and that's

19   where I was kind of jumping ahead. You

20   cautioned me to not jump ahead, that's where I

21   read point 09 where it was 3B3 where it

22   states, if the paper record cannot be viewed

23   entirely in the Display Unit at one time --

24   MR. PEARSON: The voter shall have

25   the opportunity to verify the entire paper

2   record prior to the electronic or the paper

3   ballot being stored or recorded. We comply

4   with that because they have been given that

5   opportunity to review the entire paper record

6   up to that point to where they're ready they

7   have had that opportunity at every juncture

8   right before they push the vote button.

9   MR. FLEMMING: If they made a

10   selection on anything they left out, they have

11   not verified that they have left it out on

12   paper.

13   MR. PEARSON: The system notifies

14   you of undervotes, that's the undervote

15   protection. Anything you have not voted on it

16   shows you that. It tells you that.

17   MR. FLEMMING: Electronically, not

18   on paper.

19   MR. KERRIGANIGAN: The lack of any

20   selection in that contest indicates a number

21   of voters, that's for the real time portion.

22   Then of course there's a vote portion for

23   auditing services.

24   MR. FLEMMING: I understand that's

25   where you would see that, but the voter would

2   not see that.

3   MR. PEARSON: So you're asking that

4   a system tell the voter, tell the voter every

5   opportunity they didn't select.

6   MR. FLEMMING: On paper not as

7   opposed to in addition to.

8   MR. PEARSON: So every undervote

9   situation scenario you're asking for on paper

10   that that system could tell the voter.

11   MR. FLEMMING: The way I interpret

12   this piece of it is that your summary as it is

13   printed out is what the voter needs to be able

14   to verify before the vote gets cast.

15   MR. PEARSON: Yes.

16   MR. FLEMMING: The one that slides

17   through, the voter cannot see needs to be able

18   to see and not cast until they could see that

19   and have a chance to change it.

20   MR. PEARSON: That's what I was

21   pointing to the criteria 3.09 it allows for a

22   system that don't display the entire.

23   MR. FLEMMING: So they would have a

24   multi-page in other words if it's three pages

25   long, would you come up the first nine inches

2   to be able to verify your votes.

3   MR. PEARSON: But it doesn't say

4   that in language that it's summary. It says

5   they have the opportunity to review prior to

6   casting the electronic vote. That's what that

7   says. It doesn't assume that it's a summary.

8   MR. KERRIGANIGAN: I suppose if

9   we're speaking correctly to B2 in question

10   here. First of all, it is qualified by the

11   subset A which does say, the DRE shall not

12   record the electronic record until the paper

13   record has been approved by the voter. Our

14   approval process is a constant process because

15   it's a real time verification. So that's, I

16   believe we are not in argument on the ability

17   to review our system or accept. I think your

18   direct controversy here is how could you deny

19   that record and our opportunity for the voter

20   to deny before casting their vote is that they

21   are given paper verification of any actually

22   made and if they don't like what they saw

23   verified on the paper, they could make an

24   alteration on the touch. So that's the

25   exception when reviewing and rejecting the

2   statement.

3   MR. FLEMMING: My concern is that it

4   is not a full set of their votes.

5   MR. KERRIGANIGAN: That would be a

6   receipt.

7   MR. FLEMMING: I'm just thinking as

8   it is written trying to fit it into where you

9   have it.

10   MR. ANSARI: Which we fully meet the

11   criteria what we're speaking specifically to

12   right now even subset A qualifying that voter

13   should either accept or reject, they have an

14   opportunity to do all of those things.

15   MR. FLEMMING: You're missing the

16   last two words accept and reject.

17   MR. KERRIGAN: They disagree.

18   MR. FLEMMING: But you're basing it

19   on the electronic side of it.

20   MR. KERRIGAN: On the paper record.

21   If I select Randall as one of the candidates

22   for president, I see it on paper record. If I

23   don't want that, I wish to reject that option

24   on the paper, I deselect it. When you saw I

25   changed selections it will show a negation of

2   Randall's selection as well as the new

3   selection that I've made because it's a real

4   time auditaudit log, we track every action.

5   There's an auditaudit trail of every action

6   made.

7   MR. FLEMMING: How does a voter

8   surely by paper, not electronic, notify that

9   they did not vote for either a question or a

10   contest.

11   MR. KERRIGAN: Undervote in my eye

12   would be defined as lack of action and our

13   printer is recording action. If there's no

14   action recorded on a contest, you have

15   undervote. An undervote technically can't be

16   committed until you cast a ballot because

17   until that point it's a contest that hasn't

18   been interacted with. We would agree an

19   undervote cannot be committed until a vote is

20   cast. It's equivocal you can't alter your

21   choices. So, I personally have trouble with

22   the wording of being able to verify your

23   undervotes and make an alteration after that

24   because an undervote cannot be committed until

25   it is actually cast and at that point it can

2   be altered, but I still stick to the point we

3   monitor all actions. An undervote could be

4   recognized on a paper trail by a lack of

5   action recorded in that contest.

6   MR. WOODBRIDGE: If I could make a

7   point. Some of the things we're talking about

8   here and particularly seeing a paper record

9   and how many times it comes up, comes up more

10   particularly later on in criteria and these

11   are sort of more general comments. So you

12   might want to move along to get to those

13   specific issues. Undervotes always come up as

14   being specific too, just on the thought that

15   would be more appropriate trying to deal with

16   what you're dealing with, I think. We

17   normally don't do this. We do have a special

18   request from an individual due to other

19   obligations only have a short period of time

20   and promises is going to be a five minute

21   presentation. So I'm going to ask Stephanie

22   Harris to make your presentation.

23   MS. HARRIS: Thank you and thank you

24   for making this exception for me. We only

25   found out about this hearing yesterday, so I

2   was unable to rearrange my schedule so thank

3   you. While we are pleased by the more

4   thorough certification process for the

5   printers, we at the Coalition for Peace Action

6   continue to protest attaching a certified

7   printer to an electronic voting machine which

8   has not been certified to 2005 standards. We

9   further object to privatizing the vote by the

10   not having an open source code. We do not

11   understand why this committee has not been

12   empowered to review other technologies such as

13   presynced based optical scan simultaneously to

14   the certification of the DRE printers. Having

15   tried the ES&S DRE and printer, I would concur

16   that the real time audit log as configured

17   here does not truly meet the requirements of

18   being a VVPAT. The voter must be able to see

19   a printed summary of the ballot decisions for

20   more than ten seconds and have an opportunity

21   to change the paper ballot which will

22   ultimately become the paper ballot of record.

23   Furthermore, because of voting

24   privacy issues, the reel-to-reel printer is

25   not acceptable in New Jersey. Moreover, the

2   paper roll is very short just allowing 70

3   votes and would have to be continuously

4   changed during the course of election day. It

5   does not only require enough poll workers to

6   perform this task, but also raises the

7   question of the added security steps necessary

8   in the chain of custody. The universal key to

9   open the printer is another source of

10   insecurity. Finally, the lack of notification

11   of a paper jam is unacceptable. If voters are

12   inattentive and a paper jam occurs, their

13   votes would become illegible and would be lost

14   in a recount or audit.

15   In conclusion, we have not yet seen

16   any VVPAT technology presented to this

17   committee which has been acceptable. And we

18   request that alternative technologies be

19   sought out for certification in the State of

20   New Jersey in order to give counties a real

21   choice of how to meet the mandate of the law

22   and provide a VVPAT by 2008. And once again

23   thank you so much for hearing my words.

24   MR. WOODBRIDGE: Thank you

25   Stephanie. We appreciate your input. Just

2   one question. We have provided a log

3   documentation including machine code and

4   Miss Harris brought up the question of open

5   source. Did we see all the coded machines.

6   What did we see, do you know?

7   MR. KERRIGAN: I don't believe we

8   released any source code in our documentation.

9   We would have provided our standard TDP which

10   includes user manual, maintenance, manufacture

11   software specifics but I don't believe the

12   source code was required.

13   MR. WOODBRIDGE: It looked a little

14   bit like a code to me but I couldn't tell

15   precisely what the purpose was.

16   MR. KERRIGAN: And NJIT reviewed and

17   was given all the same documentation and they

18   probably can verify they did not receive

19   source code.

20   MR. WOODBRIDGE: Other states

21   require code escrow of some sort.

22   MR. PEARSON: Correct.

23   MR. WOODBRIDGE: Is that the case of

24   ES&S.

25   MR. GREENHALGH: That's correct. A

2   number of states require the source code to be

3   escrowed in an escrow account approved of by

4   the state.

5   MR. WOODBRIDGE: Okay. Slow down a

6   little bit. We need to pick up the pace a

7   little bit. We're onto Section B3A. This is

8   not a count, but section B3B says, Continuous

9   Spool. Method: The voter views the paper

10   record on a spool-to-spool paper roll. This

11   method shall be used in a manner that fully

12   protects the secrecy of all votes cast. This

13   is also subject to exception number two that

14   we read before and the exception number five

15   raised by NJIT. In regards to the criteria.

16   MR. KERRIGAN: This doesn't meet

17   criteria which were cited in the exceptions

18   that I don't think are applicable in the

19   exceptions itself. For instance, this is

20   simply stating the spool will be used we have

21   continuous spools. The only qualification in

22   this criteria is it has to be used in a manner

23   that fully protects us of all modes and I

24   think in the overview it showed the physical

25   security around the system.

2   MR. WOODBRIDGE: With regard to

3   Exception Number Five, the two bullet points

4   reads, first one, the roll of printed paper

5   records is accessible upon unlocking the

6   printer cover. Second part, the cable

7   connecting the VVPRS to the DRE is exposed and

8   can be easily disconnected from the printer

9   port on the top of DRE. I think this was one

10   of the issues with regard to security. And

11   would you care to address that, Mr. Kerrigan?

12   MR. KERRIGAN: Yes. One of the

13   comments we made in the exception in our

14   response to the exception as pointed out

15   during the demo, they did mention that it is

16   behind a lock and key mechanism. I do have a

17   bit of trouble with the wording. That first

18   bullet could have been worded, the roll of

19   printed records is not acceptable without a

20   lock and key. That change of verbiage kind of

21   shows that someone cannot have access to the

22   printer without the key which is to be

23   maintained by the authorized personnel. I

24   believe the first one is stating how we are

25   compliant to the standard which is requiring

100

2   physical restriction to the system. We do

3   have a lock and key mechanism and we do

4   encourage the use of security tamper emphasis.

5   MR. WOODBRIDGE: Now we may address,

6   we're jumping ahead and maybe Mr. Darer may

7   want to amplify things but I think one of the

8   concerns may be you actually have poll workers

9   physically touching the ballot results. We've

10   seen in other vendors where for example, the

11   rolls are protected in a cartridge where you

12   don't see it change the cartridge. I see your

13   head nodding in an up and down direction there

14   I think that's probably the issues they may be

15   addressing.

16   MR. KERRIGAN: Again there is a

17   manual procedure. The most common reason you

18   would even open up the printer if you did have

19   to replace the reel, all the results are

20   backwards facing onto the reel so they are not

21   facing outward, they are facing inward on the

22   reel so you are able to remove that used

23   portion or that take up reel without ever

24   viewing the results so that would be a manual

25   procedure for them, for you to be able to

2   trust they are not then going to unravel the

3   take up reel and begin looking at the results.

4   I believe Wesley with the help of the Sussex

5   County people that are here spoke a bit about

6   the procedures without the system being

7   implemented here it's not really a New Jersey

8   example, but in west Virginia they would be

9   taking that take up reel place it in an

10   envelope for any sort of oddity that may be

11   done on that reel. In other words I've spoken

12   to the physical restriction of the system and

13   there are manual procedures on securing that

14   reel.

15   MS. McCABE: Marge McCabe from

16   Sussex County. I think those procedures need

17   to be dealt with on a local basis as far as

18   security issues on the poll. Anything that

19   happens with our voting machine is done by a

20   republican and democratic worker together. If

21   those roles have to be changed it would be

22   part of our criteria that two poll workers go

23   together and would put a tampered evidence

24   seal at the end of the roll before it is

25   stored away in a sealed packet.

2   MR. WOODBRIDGE: I think you would

3   want to try to keep the audience question

4   until at the end if that's okay. Would you

5   care to address the issue of printer cables at

6   the top of the machine; one is a power cable,

7   one is a printer cable.

8   MR. KERRIGAN: Both of which can be

9   secured down with the use of tamper evidence

10   seals that would just enable you to be able to

11   verify if anybody does tamper with your cords.

12   If someone does break a seal and removes

13   either one of those accessible cords, at that

14   point there's no loss taken to the votes. The

15   votes are secured behind a separate sliding

16   door which a wire seal can be placed over.

17   What the result of disconnecting the printer

18   would lock down the machine. The machine when

19   programmed for use with an RTAL printer does

20   not operate when the printer if that

21   communication line is broken the machine cease

22   as a function. So somebody who would tamper

23   with that cord would not have any vote casting

24   ability, nor have access to the votes that are

25   stored internally. It's like a power cord. I

2   mentioned during the demo it does run on

3   battery power. It's able to transition

4   seamlessly from AC to DC power. So if you

5   lost power that doesn't tamper your voting

6   session. There's no integrity to the voting

7   session.

8   MR. WOODBRIDGE: How come they are

9   on the back of the machine, not on the front.

10   MR. KERRIGAN: Design choice made.

11   I can't speak to that.

12   MR. WOODBRIDGE: Seems to be a lot

13   cleaner if they weren't toward the audience

14   like that, but.

15   MR. KERRIGAN: Also in the original

16   booth configuration it wasn't necessarily ADA

17   compliant but the machine was more of you look

18   down at it and those cords would have been

19   towards the back of an enclosed in booth that

20   have walls on both sides and those cords would

21   have been toward the back of that set up, so,

22   this is kind of evolution of a new move to

23   incorporate real time audit log so this design

24   wasn't necessarily for this just the evolution

25   that goes with the legislation.

2   MR. MAHONEY: If the power cord has

3 been moved or loose, does it give a warning so

4 they know this before the battery goes?

5   MR. KERRIGAN: That's one nice thing

6 about our implementation of the system being a

7 forward graph dated. We have constant polling

8 official interaction with the machine and it

9 is indicated on the machine at all times

10 during that open screen machine whether it's

11 on AC or on batteries and there also is a low

12 battery indicator. If the battery does get

13 low it's not recognized it's on battery if the

14 machine determines there's not enough power to

15 complete a voting session, it doesn't allow

16 one to begin. There are warning messages

17 leading up to that saying you're on low but we

18 are going to allow you to vote. Then there's

19 that one final critical one because it's at a

20 risk of not being over finished.

21   MR. WOODBRIDGE: Section B 4 and 5

22 together it's sort of the same exception. B4,

23 No electronic paper record shall indicate the

24 identity of the voter or be maintained in a

25 way that allows a voter to be identified. B5.

2   The electronic and paper records shall be

3   created and stored in ways that preserve the

4   privacy of the record. We have Exception

5   Number Three in both cases here which reads,

6   Once the voter presses the quote "VOTE"

7   unquote button to cast the ballot, the printer

8   prints out the vote summary with the exact

9   date and time of the voting session on the

10   paper record. If this timestamp information

11   is compared to the Poll Log which records the

12   time when the voter checks in, the paper

13   ballot record could be matched to the specific

14   voter, therefore compromising voter privacy.

15   I see what this means is that when the voter

16   comes in sequence A through Z or one through

17   200, that the audit trail keeps the record in

18   that same sequence; is that a correct

19   statement?

20   MR. KERRIGAN: I didn't completely

21   follow your scenario there.

22   MR. WOODBRIDGE: I'm just saying the

23   issue that they are getting to in regard to

24   Exception Number Three if I understand it

25   correctly is that the audit, the paper audit

2   trail is kept at the exact same sequence as

3   the voter that comes in. It's possible to

4   reverse engineer if you have the Poll Log, you

5   have the ballot what you can do and what you

6   can't do.

7   MR. KERRIGAN: I believe that's what

8   they are proposing but in reference to this

9   exception, in the version that's going through

10   federal testing the version we spoke to

11   implement in the State of New Jersey the

12   version of 9200 the time date stamp has been

13   taken off the printer.

14   MR. WOODBRIDGE: Okay.

15   MR. KERRIGAN: I did have one

16   question I never got to address was whether it

17   was legally allowed to record the time that

18   the voter checks in at the registration. I

19   never found out. I don't know if Sussex

20   County could say whether that's a common

21   practice to record the actual the time.

22   MR. WOODBRIDGE: The problem is what

23   happens and I can't speak for Sussex County

24   but you come and you vote if you're the 30th

25   voter, you have a piece of paper that has a

2   30.   The person runs the machine that puts it

3   on a spindle so they know where you are in

4   sequence.

5   MR. PEARSON: That would be you have

6   one device and also there was no interaction

7   of the poll workers or voters used for

8   multiple machines, theoretically you can run

9   it randomly and not trace it back, but rather

10   than belabor this issue we chose to go ahead

11   and move that from the firm ware.

12   MR. WOODBRIDGE: Taking the date

13   stamp off was part of the problem.   Part of

14   the other issue was the broken sequence that

15   shows up in a log that way.   You have to have

16   more than one machine, it helps.

17   MS. McCABE: We have between two and

18   five.

19   THE COURT: We have two sets of

20   machines depending on the district it could be

21   two machine.

22   MR. PEARSON: I think that perceived

23   problem is more pronounced in low turnouts.

24   elections.   In electronic voting, we have the

25   same challenge as well as your traditional

2   paper optical scanning systems where you have

3   low turn outs too. You have that same issue

4   really with any voting system so you need to

5   implement procedures that help protect the

6   voter.

7   MR. WOODBRIDGE: Any other comments

8   on those.

9   MR. DARER: No.

10   MR. WOODBRIDGE: B6. The VVPRS

11   components shall conform to federal and state

12   accessibility requirements. They have all

13   seen and testified this morning with regard to

14   that issue. Six A. These requirements shall

15   include, but not be limited to, an audio

16   component that shall accurately relay the

17   information printed on the paper ballot to the

18   voter. And we seen the demonstration of that

19   too. Seven: The VVPRS device shall draw its

20   power from the DRE or the same electrical

21   circuit from which the DRE draws its power.

22   MR. KERRIGAN: They both are plugged

23   into the same surge protection. It's viewable

24   from the back. The way we have these set up

25   right now or at least originally I don't know

2 if they stayed that way, you're able to daisy

3 chain them and they are all technically able

4 to run off surge protector. We can have up to

5 12 units being plugged into a line. They can

6 all run on the same line.

7   MR. WOODBRIDGE: If that's the case,

8 if the machines go down, does it go on the

9 same battery.

10   MR. KERRIGAN: If you lose AC power

11 they would all be run independently on a

12 battery. This is not a network system use of

13 a daisy chain. This is independent of the

14 hardware itself. You're just literally

15 plugging into each other's surge protector.

16   MR. WOODBRIDGE: Eight, The voting

17 machine shall provide a standard, publicly

18 documented printer port, or the equivalent,

19 using a standard communication protocol.

20   MR. KERRIGAN: And we have a serial

21 port that is standard I believe NJIT noted the

22 exact cord number RS32 that is our cord for

23 the printer.

24   MR. WOODBRIDGE: Nine is, The VVPRS

25 shall mark the paper record precisely as

2 indicated by the voter on the DRE and produce

3 an accurate paper record and corresponding

4 electronic record of all votes.

5   MR. KERRIGAN: Compliant.

6   MR. WOODBRIDGE: Ten, The DRE

7 electronic ballot image records shall include

8 all votes cast by the voter, including

9 write-ins and undervotes.

10   A.   Write in votes are votes cast by

11 a voter for an individual not listed on the

12 ballot as a formal candidate.

13   B.   Undervotes are elective

14 officials and/or public questions on the

15 ballot for which the voter has not cast a

16 vote.

17   MR. KERRIGAN: All of our ballot

18 images are recorded to the auditaudit file

19 which is on a flash.

20   MR. WOODBRIDGE: Just a question on

21 the voter image. What kind of image is it?

22 Is it a PDF which is it?

23   MR. KERRIGAN: It is not an image

24 where it's a snapshot. It's simply

25 unformatted text laid out and it highlights

2   the selections. It just notes the selections

3   made by the voter.

4   MR. WOODBRIDGE: So it's an image in

5   the sense it's a duplicate of the record of

6   what's printed. John, I think you have some

7   questions on undervotes. I don't know if you

8   want to deal with that issue.

9   MR. FLEMMING: On ten, not yet.

10   MR. WOODBRIDGE: Let's go to eleven.

11   An electronic ballot image record shall have a

12   corresponding paper record. The paper record

13   shall be printed and the voter shall have the

14   opportunity to verify the paper record in its

15   totality prior to the final electronic record

16   being recorded.

17   B.   The DRE electronic ballot image

18   record shall correspond to the paper record in

19   a manner that does not reveal the voter's

20   identity.

21   C.   The paper record shall contain

22   all voter selection information stored in the

23   electronic ballot image record. And just to

24   come back for a second, I think you just

25   testified they are planning on moving the date

2   stamped on the record.

3   MR. PEARSON: It is removed.

4   MR. FLEMMING: Going to Eleven A

5   basically what it's saying, the paper record

6   in its totality prior to the final election

7   recorded which would for me mean that it would

8   be the whole selection on the paper before you

9   actually hit the last portion to get the vote

10   to the record.

11   MR. KERRIGAN: I think you're

12   assuming it all has to occur at the same time.

13   You're saying you have to be able to paper

14   record it in its totality all at the same

15   time. We do not take that interpretation, we

16   do allow the voter to verify the entire

17   record, the entire paper record when they get

18   cast and their vote is cast they have viewed

19   everything that is printed to the log, they

20   have the opportunity to view.

21   MR. FLEMMING: On paper prior to

22   getting the vote they are not given the

23   opportunity to show them on paper that they

24   have any votes that they have not voted on.

25   MR. PEARSON: This language does not

2   address undervotes.

3   MR. FLEMMING: Let's take the

4   undervotes out of there. How is your paper

5   showing the voter every candidate that they

6   voted for and I want to take undervote word

7   out of here having a non vote for a candidate.

8   How does your paper show exactly because

9   really if you think about it if a person votes

10   or decides not to vote for a candidate or an

11   election, that's the same as voting and that's

12   your decision to either vote or not vote and

13   what I'm trying to figure out is the whole

14   thing here is voter verifiable paper trail

15   which is the intention of the voter for every

16   contest along the line so that they could see

17   that prior to that last vote actually once you

18   go on here it will actually ask you, you have

19   three chances at that. So not only do we have

20   the first one but we have that multiple time

21   until you hit that last final vote and it's

22   really to make sure this whole thing in my

23   mind is to make sure the voter is comfortable

24   that who they voted for electronically and

25   electronically I whole heartedly understand

2   everything is shown to them, but this hearing

3   is more on the paper side. How are we showing

4   them all their intentions.

5   MR. PEARSON: I think this would be

6   a good time to show you the iVotronic. Go

7   ahead, Kevin. I would like to bring it back

8   to the language and not make any other broader

9   interpretation of what the language

10   requirement states. I think it is an

11   interpretation issue and obviously we believe

12   we comply with this language in Eleven A.

13   MR. KERRIGAN: I would mention the

14   real time audit log provides comfort that

15   everything they are doing is being captured

16   electronically that they have a paper

17   verification of that and the usability studies

18   that were conducted at the birth of this type

19   of technology it was found that with the real

20   time audit log we have a far less need to have

21   to educate voters on adding another system or

22   a receipt at the end, for instance, that would

23   alter the use of DRE as it is today. For

24   instance, for Sussex County if they

25   implemented the RTAL printer, they would not

2   have to change anything. They are currently

3   using that system, all it is now you have

4   verification immediately on the side of the

5   paper of everything that you've already been

6   doing for years in that county. So there's no

7   learning curve for the voter. There's no

8   extra process and there's no casting or

9   proceeding. They are providing a real time

10   record of every action so that I would like to

11   go onto the other issue, but we will address

12   undervote when it comes up.

13   To this language we are compliant

14   that we allow them to review everything

15   printed on paper.

16   MR. PEARSON: In its totality prior

17   to electronic record being recorded.

18   MR. KERRIGAN: And therefore to

19   offer selections and see that on paper and

20   verify it again.

21   MR. WOODBRIDGE: I think John

22   mentioned before this issue of how many

23   ballots you get actually comes up later on. I

24   think on page eight, so we're getting into the

25   nitty-gritty a little more when we get at that

2   stage. Any other comments on section eleven?

3   If not, we're going to start getting into some

4   heavier water. The design requirement for

5   VVPRS. The printer shall be designed to have

6   a sufficient amount of paper, ink, toner,

7   ribbon or like supply for use in an election,

8   taking into account an election district

9   should have at least one voting machine per

10   750 registered voters. I stop there. That

11   relates to Section Number Four and that states

12   as follows. Paper replacement is expected for

13   an election with more than 120 votes. Each

14   selection, deselection or change generates one

15   or two lines of print plus blank space equal

16   to approximately four lines. I should say

17   this issue came up in July when we spoke to

18   other vendors and the first question was, did

19   your machine have to be able to accommodate

20   750 voters before you changed its paper and I

21   think subject to committee's improving my

22   memory on this, I think we ultimately decided

23   it didn't state specifically that we had to go

24   through 750 votes before you changed paper.

25   That is one interpretation of it. And I think

2   maybe part of what they are getting at here

3   and Mitch, feel free to jump in if you wanted,

4   I think that's primarily what you were talking

5   about in this particular exception simply what

6   we have seen in a couple of those machines.

7   MR. DARER: Yes, but I would say 140

8   votes can go by pretty quickly. It does seem

9   to me what the average machine, maybe it isn't

10   750 registered voters which may be on a high

11   side, it still looks to me you are going to

12   change that machine six times during a 12, 14

13   session voting period I would think.

14   MR. KERRIGAN: If I may, two

15   comments on this. First I would just like to

16   read our response to this exception where we

17   do feel the NJIT assertion that the paper will

18   last for 120 voters is subjective and

19   misleading. We spoke about why that number

20   can toggle, but the amount of paper used will

21   vary on voter activity which includes number

22   of voters, length of the ballot therefore the

23   amount of voters per roll of paper varies from

24   election to election and from voter to voter.

25   As you've already mentioned, we do also feel

2   that the regulation do not state the paper

3   roll must accommodate 750 votes, but in terms

4   of how many voters can vote on a machine, I

5   will disagree it's 120 and we have numerous

6   options, several of which weren't employed for

7   the testing that could significantly alter the

8   paper receipt.

9   MR. WOODBRIDGE: Can you get a

10   larger roll than some of the vendors have.

11   MR. KERRIGAN: No because of the

12   physical constraints of where that roll fits

13   in. As of now we do employ the 350 foot roll

14   but one other option is change it from a nine

15   inch window to 4.5, another one percent before

16   you go on so they know what that means so per

17   100 voters you are saving 4.5 inches of paper

18   per voter, so that's a significant amount of

19   saving right there if you choose to use that

20   option.

21   MR. MAHONEY: Would that be a change

22   in the software machine also.

23   MR. PEARSON: It's actually a

24   programmer setting and that's done originally

25   in the coding. You either have the nine inch

2   or four and a half inch window.

3   MR. MAHONEY: So the ability is

4   already there that's in the system.

5   MR. KERRIGAN: Some other options

6   that were available in this version and have

7   been brought forward, you have the ability to

8   turn on and off whether a summary is printed

9   at the end of each session that isn't for the

10   voter, so it could be the county's option to

11   not have it and then they did have the audit,

12   the paper trail they would have to go through

13   and look at all the accepted and rejected

14   options and figure out what the final vote was

15   or scan the hardware so that vote we have

16   tested that probably took up about 12 inches

17   of what Mitch stated was 27 inches per voter.

18   Also a portion of that 27 inches I believe,

19   was part of an initial take up spool. It was

20   at the end of the roll you were showing us so

21   I would disagree with the 27 inch and almost

22   have of it could probably be cut off by

23   toggling some of the options so you can turn

24   on and off the vote summary, you can turn on

25   and off whether it does an entire election

2   summary at the end and you could also change

3   it from a nine inch to 4.5 inch.

4   MR. MAHONEY: I notice when it

5   printed out, you made a new selection there

6   was a large space. Is it possible to bring

7   the lines closer together?

8   MR. KERRIGAN: We have made

9   significant reduction in between lines in this

10   version. Previously there was probably ten

11   lines of space in between each selection, with

12   this we did reduce it down to what we feel is

13   a good amount of space to clearly have each

14   selection or deselection spaced out.

15   MR. FLEMMING: How much space for a

16   person does it usually take for a voter to

17   have their whole election changed and so

18   forth, how much is that?

19   MR. KERRIGAN: That's back to all

20   those different variables keyed into that.

21   MR. FLEMMING: If you're at nine

22   inches of viewable space, going back to the

23   other question. The totality, could it have

24   all those changes in front of them in that

25   nine inches.

121

2   MR. KERRIGAN: Depends on the size

3   of the selection. If the election was small I

4   suppose the quantitative way to answer that we

5   should measure the number of lines that fit on

6   a nine inch window and then you could figure

7   out what maximum number of contests would be

8   in an election that would fit a nine inch

9   window of just making the selection of each

10   contest. That would be the scientific way to

11   answer that, I don't know.

12   MR. PEARSON: There is also an

13   option not to print the barcodes after each

14   session. That wouldn't be an option.

15   MR. WOODBRIDGE: You have to make

16   sure that the paper trail can recreate your

17   whole election.

18   MR. PEARSON: And not all states is

19   that required for each voter session to have

20   that barcode.

21   MR. KERRIGAN: So when we first

22   kicked this off, we were giving them a

23   probability something I know we together with

24   NJIT struggled with how should we test these

25   machines given the amount of parameters

2   because it's implemented across the city and

3   we have a lot of customer demands which

4   parameters to enable or disable and the

5   testing proceeded.

6   MR. WOODBRIDGE: National standards

7   to deal with, is that what you're talking

8   about, the national requirement.

9   MR. KERRIGAN: There could be some

10   that affect the system, but there are some

11   that are state mandated. We as a national

12   vendor actually international, we have to come

13   to a lot of different demands and state

14   mandates have to determined how to turn on and

15   off restrictions.

16   MR. PEARSON: I will say there was

17   significant amount of discussion and

18   investigation on this performed by this PPC in

19   this development of the newest and latest

20   standard not only released in the review,

21   there was an effort to look at ways, better

22   ways technology to look at this and there was

23   nothing that really significantly came out of

24   their evaluation. So the standard going

25   forward they are not going to see a whole lot

2   of changes as far as the printer technology

3   other than the end review.

4   MR. WOODBRIDGE: My recollection is,

5   I don't want to digress, my recollection is

6   the standards have been voluntary to date; is

7   that correct? Is there going to be national

8   standards?

9   MR. PEARSON: They are all

10   voluntary.

11   MR. WOODBRIDGE: There's no one size

12   fits all standards.

13   MR. GREENHALGH: If the passed

14   legislation requires mandating 30 states out.

15   In other words, even though they are

16   voluntary. They apply in West Virginia.

17   That's the state that Jane deals with. You've

18   got to conform with the standards as it is

19   written up.

20   MR. WOODBRIDGE: They have to meet

21   federal standards.

22   MR. GREENHALGH: Correct. West

23   Virginia code says you've got to meet the

24   federal standards. The most recent federal

25   standards or they cannot be used in West

2   Virginia. As written in the code they've made

3   the voluntary standards mandatory.

4   MR. WOODBRIDGE: For purposes of

5   edification of the next step, could you adopt

6   the federal standards and in addition to that

7   adopt additional standards above and beyond

8   the federal standards; is that possible?

9   MR. GREENHALGH: Yes.

10   MR. WOODBRIDGE: Going onto 3(A)2.

11   If any addition or replacement of paper, ink,

12   toner, ribbon or other like supply is

13   required, it shall be don with minimal

14   disruption to voting and without circumvention

15   of the security features of the Printer and

16   Storage Unit which protect cast ballots and

17   the secrecy of the vote. This is also noted

18   with the exception of the four and I think the

19   part that was relevant there was to comment

20   the roll paper record is accessible on

21   unlocking the printer cover I think it's an

22   issue. Do we have any comments on that?

23   Okay.

24   Roman numeral III A 2. The VVPRS

25   shall have a low-paper indicator that will

125

2   allow for the timely addition of paper so that

3   each voter can fully verify, without

4   disruption, all of his or her ballot

5   selections. And there is an exception of

6   number six noted by NJIT and that reads: If

7   the amount of paper reaches the minimum limit

8   during a voting session, the DRE does not give

9   the voter the opportunity to finish voting and

10   the DRE automatically voids the vote. That

11   is, the system cancels the selections and

12   locks the screen, and the voter has to restart

13   the voting session.

14   MR. KERRIGAN: I would say that we

15   are compliant because we do know if it's low

16   paper, low paper or low power it is true that

17   that voting session is canceled. The problem

18   would need to be rectified replacing the paper

19   or reestablishing AC power to the unit and

20   then the voter would be able to conduct their

21   voting session in its entirety and place all

22   of its voting selections on the system. In a

23   sense because of this hardware issue that

24   session, due to the hardware issue no longer

25   in progress, the voting session is suspended

2   and then a new voting session is activated for

3   them.

4   MR. WOODBRIDGE: The voting they've

5   done to that point is basically voided and

6   they revote again; is that correct?

7   MR. KERRIGAN: The intention of our

8   paper trail is to have it with a reel-to-reel

9   system. You want to have it concurrent, not

10   pasted together, two separate pieces of paper

11   concurrent and a trail made by the voter. The

12   paper runs out, you got to start back over

13   deal with the paper issue, give them the

14   opportunity to have an entire fully

15   uninterrupted voting session.

16   MR. WOODBRIDGE: I think I

17   understand that. I think what I'm a little

18   confused about is the low paper indicator

19   rather than out of paper. You've got ten feet

20   of paper, that should be enough for someone to

21   then vote. And so it seems to me the whole

22   idea, there should be enough of a warning

23   indication to give the voter an opportunity to

24   vote before you got to change the paper.

25   MR. KERRIGAN: And Wesley was

2   speaking about this during our demo. There is

3   a paper indicator which would indicate the

4   problem the paper should be dealt with at that

5   point. If voting resumes which it will allow

6   you to resume up to a certain point, in other

7   words it's kind of saying low paper but it is

8   not a fine line. There's a point where it's

9   going to begin notifying you and notify voting

10 and then it's going to notify you the voting

11 session to end because there is risk that you

12 might not be able to finish.

13   MR. WOODBRIDGE: You have a two

14 light mode voting symbol.

15   MR. KERRIGAN: Visual to contact the

16 poll worker.

17   MR. WOODBRIDGE: Visual to?

18   MR. KERRIGAN: Visual on the screen

19 as well as if someone was marking a ballot

20 there would be a warning method associated

21 audio file and also Will spoke to physically

22 we can have paper that has a rooster tail that

23 would begin to note receipt printed. You can

24 see the beginning.

25   MR. WOODBRIDGE: That will notify

2   the voter. How does that tell the poll worker

3   that you're getting --

4   MR. GREENHALGH: The precinct could

5   see that when you're activating a ballot.

6   MR. WOODBRIDGE: If they came in the

7   booth after someone has voted and they are in

8   the rooster tail, how much paper do you have

9   on the rooster tail?

10   MR. WESLEY: I don't know the exact,

11   I can't recall. We could get that for you. I

12   think about eight feet.

13   MR. WOODBRIDGE: What I'm still not

14   entirely clear about, so how do you detect

15   other than the rooster tail when your paper is

16   locked.

17   MR. PEARSON: A sensor on the paper.

18   It's a low paper sensor.

19   MR. WOODBRIDGE: Across the paper.

20   When you sense that, at that low point can the

21   voter continue voting at that point?

22   MR. PEARSON: I don't know that.

23   Kevin, do you know if it would be possible

24   when we hit the low paper stage? I don't

25   specifically have the answer. We can get you

2   the answer but I know that it was a design

3   feature in the system and we always default to

4   ensure the protection and integrity of that

5   voter, that vote session so we always kind of

6   err on the side of caution and precaution.

7   MR. WOODBRIDGE: I understand that

8   but I think the criteria appears to be very

9   clear if you get the low paper indicator, it

10   appears to me that there should be enough

11   paper so the voter could continue and complete

12   the vote before you change it. That's sort of

13   my reading of it. I don't know what others

14   say.

15   MR. PEARSON: I would believe that

16   that would be the case and that is something

17   that you could test in certification testing

18   examination to see if you're comfortable with

19   the way the system operates and if it meets

20   your criteria there.

21   MR. WOODBRIDGE: Mitch, you want to

22   comment on that? I guess there's an

23   exception. I think what I understand the

24   exception, it says, If the amount of paper

25   reaches the minimum limit during a voting

2   session, the DRE does not give the voter the

3   opportunity to finish voting and the DRE

4   automatically voids the vote; is that correct?

5   MR. DARER: That's what we found.

6   MR. WOODBRIDGE: If that's correct

7   that does not seem to meet the letter of the

8   criteria here.

9   MR. KERRIGAN: Perhaps I could speak

10   to voting allowed.

11   MR. FLEMMING: What indication did

12   you have that paperwork was getting low.

13   MR. WOODBRIDGE: How do you know

14   when the paper got low.

15   MR. DARER: There was a display

16   message on the DRE.

17   MR. WOODBRIDGE: So if you were

18   inside the booth, it would say paper low,

19   something like that.

20   MR. DARER: Yes, something like

21   that.

22   MR. WOODBRIDGE: If something like

23   that came up, did it say you can't vote any

24   further? What did it tell the voter, do you

25   know?

2   MR. ANSARI: Nirwan Ansari from

3   NJIT. The error message stated like the

4   printer is not working correctly place in

5   supervisor PEB and the paper ballot printer

6   has malfunctioned, your ballot will be

7   canceled, please ask your poll worker for

8   assistance. But then afterwards we go to

9   check the electronic records, the votes there

10   are voided the votes whatever the votes have

11   been done in the middle of the session are not

12   recorded so you start a whole new session

13   begin.

14   MR. WOODBRIDGE: So the voter may

15   come in, start voting, get this message in the

16   middle of voting it says come out of the

17   voting booth.

18   MR. ANSARI: Right.

19   MR. WOODBRIDGE: If that is not a

20   proper interpretation, let us know but that

21   appears to be difficulty in using this to the

22   criteria.

23   MR. PEARSON: We are seeking the

24   precise rules that we apply, so I should have

25   an answer for you today.

132

2   MR. WOODBRIDGE: We have some other

3   materials to catch up.

4   Roman numeral 3(A)3 still on the

5   printer section. The printer shall be secured

6   by security seals or locking mechanisms to

7   prevent tampering. The printer shall be

8   accessed only by those election officials

9   authorized by the county commissioner of

10 registration. And that also relates to the

11 Exception Number Five. NJIT indicated that

12 problem with those sections relating to the

13 unlocking of the printer covering and also the

14 exposed cables. And I know you testified and

15 you did a demonstration.

16   MR. KERRIGAN: I think we've

17 addressed this issue. As required, we have a

18 locking mechanism and the ability to apply

19 security to it.

20   MR. WOODBRIDGE: And I think you

21 also indicated if you remove either the power

22 or the printer cable that the machine would

23 stop; is that correct?

24   MR. KERRIGAN: Not the power.

25   MR. WOODBRIDGE: The printer.

133

2   MR. KERRIGAN: But in an election

3 program you use the RTAL printer it does not

4 allow functioning without the printer.

5   MR. WOODBRIDGE: 3(A)4. The

6 printer, last section. The VVPRS shall be

7 capable of showing the information on the

8 paper record in the font size of at least 3.0

9 millimeters and should be capable of showing

10 the information in at least two font ranges

11 3.0 to 4.0 millimeters and 6.3 to 9.0

12 millimeters under the control of the voter or

13 poll worker. This criteria can be met by

14 providing a magnification device with the

15 VVPRS.   And there was no other exception.

16 Under seven, it says, The VVPRS cannot show

17 the information in font range of 6.3 to 9.0.

18 The maximum size with the vendor supplied

19 magnification device is in the 3.0 to 5.0

20 millimeter range.

21   MR. KERRIGAN: We feel that

22 observation is inaccurate. You can achieve

23 various lengths from the printout by guiding

24 the magnification by the window. So, the

25 range we feel is within required range in

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2   criteria and we would be interested to see the

3   test method for how they acquired the range,

4   the view of those characters through the

5   magnification device.

6   MR. WOODBRIDGE: It talks about

7   supplying a magnification device. Do you

8   supply magnification devices.

9   MR. KERRIGAN: NJIT had it

10   available.

11   MR. WOODBRIDGE: What is it.

12   MR. KERRIGAN: A piece of plastic.

13   MR. PEARSON: Portable overlay.

14   MR. KERRIGAN: It holds that bearing

15   length to get the desired magnification.

16   MR. WOODBRIDGE: Is it like a glass

17   lens?

18   MR. KERRIGAN: It's a plastic

19   transparent sheet.

20   MR. PEARSON: Rigid magnification

21   sheet.

22   MR. WOODBRIDGE: Mitch, you want to

23   comment on how you determined that it didn't

24   meet the larger size font?

25   MR. ANSARI: Nirwan Ansari from

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2   NJIT.   With the use of ruler put on the

3   magnifying devices varying the distance, we

4   tried to get as thick as possible without

5   ambiguity, the letter may be blurred, when do

6   you different systems the range we could get

7   is what we actually documented. We did it

8   quite a few times, many times.

9   MR. WOODBRIDGE: So much that's the

10   methodology. How do you measure?

11   MR. KERRIGAN: I guess my answer to

12   it is the font size used are standard with

13   current technology and with the magnifying

14   glass held up at varying ranges it will

15   enlarge.

16   MR. WOODBRIDGE: When they tested it

17   they still didn't get it in that range of

18   being readable to paraphrase it correctly.

19   MR. KERRIGAN: I think that's where

20   we cease to be in the quantitative of when it

21   cease to be illegible. In my use I could get

22   the letters to be very large. I haven't

23   measured with the ruler.

24   MR. WOODBRIDGE: Quantifiable, it

25   says NJIT is quantifying.

2   MR. KERRIGAN: Since it's never been

3   an issue before. I'm sure there are

4   magnifications that could be used.

5   MR. WOODBRIDGE: If there are make

6   sure it is in your supplemental piece. Any

7   questions? Moving onto section Roman Numeral

8   3(B). Paper Roll Display Unit. Paragraph

9   one, The paper record shall be displayed in a

10 way that allows the voter to privately and

11 independently inspect it. And that was

12 assuming to section number two of your report

13 which has a number of sections. Do you have

14 any comments about III (B)1. Page four.

15   MR. KERRIGAN: Yes. Our response is

16 that we are complying with the RTAL can be

17 viewed throughout through the window on the

18 left-hand side of the electronic, the privacy

19 shield. So it knows to be adjusted so you

20 could contain yourself within the voting area

21 which both of those help voter privacy.

22   MR. WOODBRIDGE: John, any comments?

23 Roman numeral III(B)2. If the paper record

24 cannot be viewed entirely in the Display Unit

25 at one time, the voter shall have the

2   opportunity to verify the entire paper record

3   prior to the electronic or paper ballot being

4   stored and recorded. I think John you had

5   touched upon this before.

6   MR. KERRIGAN: I think this is where

7   Steve was speaking to the language in

8   particular.

9   MR. WOODBRIDGE: Daryl, you have any

10   additional comments? Okay.

11   Roman numeral III(B)3. The display

12   unit shall have a protective covering which

13   shall be transparent and shall not obscure the

14   voter's view of the paper record. This

15   covering shall be in such a condition that it

16   can be made transparent by ordinary cleaning

17   of its exposed surface.

18   MR. KERRIGAN: Made of durable

19   transparent plastic.

20   MR. WOODBRIDGE: Top of page five.

21   Roman numeral III(C). This relates to paper.

22   One, Any paper record produced by a VVPRS

23   shall be readable by voters and election

24   officials.

25   Two. All paper records shall be

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2   stored in accordance with vendor

3   specifications. I believe the documentation

4   you gave us provided some indication of how

5   the paper is to be stored; am I correct?

6   MR. KERRIGAN: Yes.

7   MR. WOODBRIDGE: C.3. If stored in

8   accordance with vendor specifications, the

9   paper used produce to produce a paper record

10   shall be readable for a period of at least two

11   years after the election in which it is used.

12   Do you have any comments with regard to

13   section C you want to highlight?

14   MR. KERRIGAN: Just quickly, the

15   printout is legible computer generated font.

16   We've spoken about the variance of that font

17   size. They are listed in your iVotronic guide

18   which have been given to customers and lastly

19   we did provide documentation specs from the

20   paper user which states that the paper can

21   last anywhere from five to seven years which

22   we list in our documentation.

23   MR. WOODBRIDGE: The last part of

24   section Roman numeral III, Paragraph Three.

25   Paper Record Storage Unit. Subparagraph one.

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2   Security protections including, but not

3   limited to, security seals or locking

4   mechanisms, shall be built into the storage

5   Unit to prevent tampering at all times,

6   including preelection, election day, and post

7   election. The Attorney General, through the

8   Department of Law and Public Safety, will

9   issue chain of custody guidelines regarding

10   the storage unit. And this is noted with

11   regard to exception number five.

12   The second part there, The roll of

13   printed paper records is accessible upon

14   unlocking the printer cover.

15   MR. KERRIGAN: Unlocking the printer

16   cover, you would have to have access to the

17   key as well as seals may be administered by

18   the counties as legally or deemed necessary.

19   MR. WOODBRIDGE: By storage unit I

20   assume you're talking about the entire printer

21   mechanism. Is that the case here you don't

22   have a second storage unit, integrated

23   printer.

24   MR. KERRIGAN: Integrated with the

25   booth itself from the booth set up, yes, the

2   printer is maintained within the booth set up,

3   so procedures would have to be established for

4   how to maintain that booth, but we've already

5   spoken about the chain of custody for the take

6   up wheel and I don't know if you can interpret

7   the signs pertaining to the maintenance of

8   that as well, but the unit itself is secured.

9   MR. MAHONEY: I have a question

10   about the paper roll. Since the paper roll

11   holds as many as 700, you're going to have to

12   replace it several times throughout the day.

13   Let's assume we do. Is there any way that the

14   roll is determined to be one of two, two of

15   two, three of three so if one is missing is

16   there any way that it's said, okay, this paper

17   roll is replaced, this is the second paper

18   roll going into the machine or this is the

19   third.

20   MR. KERRIGAN: We've mentioned some

21   of the administrative ways that could be

22   handled. One, first I should mention in all

23   my real world elections I've never had to

24   replace a paper roll. That's my experience

25   with the system. As we mentioned, if you were

2   to put a sealseal over that, there are certain

3   guidelines that go with that and maybe that's

4   where the procedure could be documented, but

5   in the end it comes down to local

6   administration so the decision could be made

7   by them.

8   MR. MAHONEY: What you're saying

9   there's no way for the machine to put like one

10   of one, two of two on this whole roll. You're

11   saying it's procedural roll has nothing to do

12   with that.

13   MR. PEARSON: Yeah, the machine

14   standpoint does not mark a roll or know when

15   one roll, how many rolls have been used

16   throughout the election. It tells you when a

17   roll is low. It won't allow you to continue

18   voting, but it's not going to mark okay this

19   is the second one. But the roll does have the

20   serial number of the machine.

21   MR. WOODBRIDGE: But you can match

22   the roll of the machine but you can't tell

23   what the sequence is.

24   MR. KERRIGAN: You could with the

25   time date stamp.

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2   MR. WOODBRIDGE: The next section

3   Roman numeral IV on pages five and this

4   section don't include any exceptions from

5   NJIT, so I'm going to read them quickly and

6   see if we have any responses or concerns.

7   A. Paper Records. The paper record

8   shall include identification of the particular

9   election, the election district, and the

10 voting machine. We have compliance on that.

11   MR. PEARSON: Yes, we're compliant.

12   MR. WOODBRIDGE: Paper cord. The

13 paper record shall include a barcode that

14 contains the human-readable contents,

15 shorthand is acceptable, of the paper record.

16 I'm not sure what that means, of the paper

17 record. We did see a barcode on the machine

18 for this print out.

19   MR. KERRIGAN: It is a standard PDF

20 format.

21   MR. PEARSON: Regular.

22   MR. WOODBRIDGE: What is the

23 information on the barcode.

24   MR. KERRIGAN: It's identical to the

25 ballot image.

2   MR. WOODBRIDGE: You can read the

3 barcode and it tells you what was the

4 information in the ballot cast, right.

5   MR. KERRIGAN: The ballot cast, the

6 voter's final selection. It's not a print out

7 of all the voter activity.

8   MR. WOODBRIDGE: It's a print out of

9 the summary there.

10   Two A. The barcode shall use

11 industry standard format and shall be able to

12 be read using readily available commercial

13 technology, correct?

14   MR. PEARSON: Yes.

15   MR. WOODBRIDGE: B. If the

16 corresponding electronic record contains

17 digital signature, the digital signature shall

18 be included in the barcode on the paper

19 record.

20   One. A digital signature is extra

21 data appended to an electronic document which

22 identifies and authenticates the sender and

23 message data using public key encryption, or

24 other means approved by LPS. I want to

25 digress here a second. I think Kevin

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2   indicated that he used a low bit, 16 bit

3   encryption. I'm a little confused on what you

4   used.

5   MR. KERRIGAN: Maybe I misspoke so

6   eight bites to a bit and two, 56 divided by

7   eight. It is 256 bit low fiche.

8   MR. WOODBRIDGE: I believe that is

9   the gold standard.

10   MR. KERRIGAN: This encryption is

11   standard.

12   MR. WOODBRIDGE: Any comments? C.

13   The top of six. The barcode shall not contain

14   any information other than an accurate

15   reflection of the paper record's

16   human-readable content, error correcting

17   codes, and digital signature information.

18   MR. KERRIGAN: Yes.

19   MR. WOODBRIDGE: Three. For the Cut

20   and Drop Method, if the paper cannot be

21   displayed in its entirety on a single page,

22   each page of the record shall be numbered and

23   shall include the total count for that ballot.

24   Four. The image created on the

25   paper record shall include every contest that

2   is displayed to the voter on the DRE,

3   including write-ins and undervotes.

4   MR. KERRIGAN: Right.

5   MR. WOODBRIDGE: Five. The paper

6   record shall be created such that its contents

7   are machine readable.

8   MR. KERRIGAN: Compliant.

9   MR. WOODBRIDGE: Six. The paper

10   record shall contain error correcting codes

11   for the purpose of detecting read errors and

12   for preventing other markings on the paper

13   record from being misinterpreted when the

14   paper record is machine read.

15   A. A read error is a separate piece

16   of data that can be used to indicate whether

17   the data printed on the paper record is

18   different from the data created on the

19   electronic record.

20   What is the data error record code.

21   MR. KERRIGAN: I'm not able, I'm not

22   really able to speak to that.

23   MR. WOODBRIDGE: What are they?

24   MR. KERRIGAN: What is it in

25   reference to process, it is kind of a learning

2   process as we worked with NJIT. It's in

3   reference to the machine's ability when

4   printing the barcode to detect if any sort of

5   alterations have been made. If somebody tried

6   to mark it with ink over the barcode, the

7   threshold or ability of whatever barcode

8   standard you're using instability to determine

9   that data and see whether it's been

10   manipulated in any way. So our answer to this

11   was because we are implying barcode dated

12   would be dated by a COTS system that's outside

13   of our control to allow for a vendor

14   independent auditing of this, so that you're

15   correct the code would come from barcode

16   standard itself. I think I've accurately

17   explained that.

18   MR. WOODBRIDGE: We haven't gotten

19   any exceptions from NJIT. This was sort of a

20   sprint on the assumption the statements are

21   accurate. But so I don't want to beat a dead

22   horse on that issue, why don't we take a quick

23   five minute break and then we could read and

24   see if we can't finish the rest of the

25   sections here.

2   (Whereupon a brief recess was

3   taken.)

4   MR. WOODBRIDGE: We are going to go

5   back on the record again and pick up from

6   where we left off which was section Roman

7   Numeral Number III, I believe Four. DRE

8   Electronic Records. The electronic ballot

9   image record and paper records shall be linked

10   by including unique identifiers so that an

11   individual paper record can be identified with

12   its corresponding electronic record. Unique

13   identifiers are tools that will allow LPS to

14   measure the reliability and accuracy of the

15   voting system, as necessary. The electronic

16   ballot image and the paper record shall not

17   reveal the identity of the voter.

18   A. Unique identifiers shall not be

19   displayed in a way that could be easily

20   memorized. This is related to Section Eight

21   in the NJIT report. Says, The vendor

22   documentation does not provide the procedure

23   to reconcile the electronic ballot image

24   records within the paper record. However, the

25   project team determined that the electronic

2   ballot image records are saved in the

3   ascending order of the electronic

4   Identification Number (EIN) a memory address

5   pointer referred by the vendor); the EIN is

6   printed on the paper record and contained in

7   the barcode corresponding paper record. Thus,

8   the EIN is the linkage of electronic ballot

9   image record. However, matching the

10   electronic ballot image records to the

11   corresponding paper records is difficult for a

12   large volume of votes, and is possible only if

13   no paper records are lost. Comments.

14   MR. KERRIGAN: I think the majority

15   of that NJIT response is accurate. That is

16   how our system works, the linkage EIN and how

17   that unique identifying record for every

18   voting session is linked to paper record to

19   the ballot. So I think a majority of what

20   they are stating is how we are complying. The

21   only contention would be the last sentence.

22   However, matching the electronic ballot image

23   records to the corresponding paper records is

24   difficult for large volume of votes, and is

25   possible only if no paper records are lost.

2 Yes, it is just inherently going to be that

3 way if you're trying to identify every single

4 paper record to every single vote there's

5 going to be. Each paper record would have the

6 EIN on it. So the real issue is if you had a

7 thousand votes on paper and a thousand EINs

8 printed on paper, you have to link those one

9 at a time with what's in the memory. It's

10 internally going to be a difficult process if

11 you get to that stage where you have to audit.

12 We're not talking about the procedure that is

13 standard protocol, this would be -- actually I

14 don't know when this would be implemented. I

15 guess it would be a last case scenario if you

16 were doing an audit and first you would have

17 your electronic record, you would verify

18 results that could be, compare those records

19 to your print out or your election summary

20 reports from the paper and then I suppose if

21 there was some sort of adjudication that

22 needed to happen where you have to identify

23 particular ballots then you would go through

24 this arduous process of linking the paper to

25 the ballot images.

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2   THE COURT: So if I understand you

3   correctly, it is technically not so much a

4   defect so much as it is something that makes

5   the process a little harder to verify; is that

6   correct, Mitch?

7   MR. ANSARI: Nirwan Ansari from

8   NJIT. I'm attempting to respond to ES&s. I

9   would like to point out that in the document

10 with respect to exception eight, you mentioned

11 that the EIN number is the link but if it's

12 not an ascending order sequential index that

13 is not correct. We found out that the EIN

14 number when they print the paper record stored

15 in the electronic record, they store it in the

16 ascending order of the EIN number. Here is a

17 test we did for 31 votes so we know exactly

18 which voting scenario and then when we print

19 it from the paper record, not the paper record

20 from the electronic record and then match it

21 to the paper records. Each paper records of

22 each voting session has an EIN number and the

23 record that is stored in the electronic record

24 when they print it up, it printed in an

25 ascending order even though the EIN number is

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2 rendered EIN is randomly generated but when it

3 start, it start in ascending order so that you

4 can match if you have enough time, manpower if

5 you have 31 votes are easy to match. You

6 place the -- since you print up the record

7 from the electronic record and then you got a

8 paper record, you arrange the paperwork

9 according to in EIN ascending order then you

10 can match them all exactly. Thirty-one is no

11 problem. The problem is if one of the records

12 is lost that means this match will be upset

13 then that could be a problem, that's what we

14 are trying to say in this exception.

15   MR. WOODBRIDGE: Only if no paper

16 records are lost. If paper records should be

17 lost physically, it would mean one of those

18 rolls would have to disappear; is that

19 correct?

20   MR. ANSARI: One of the rolls or

21 even one vote is gone, one of the papers is

22 gone then they will be upset in attempting to

23 match them.

24   MR. WOODBRIDGE: It is not easy to

25 match them.

2   MR. ANSARI: At that time they may

3   not be able to match. Perhaps when no paper

4   is loss, we have all the records on hand

5   electronic you have no problem matching it up.

6   MR. WOODBRIDGE: Thank you.

7   MR. FLEMMING: The last ballot if

8   you have a paper jam or paper rip during a

9   printing of a record when it gets fixed does

10   that have to be reprinted.

11   MR. PEARSON: No.

12   MR. FLEMMING: Then with this

13   criteria when you have a contention in

14   election it's paper that is going to be used

15   as your official election, so how do you vote

16   it to make sure all the electronic votes also

17   have paper records available. Because

18   thinking it from the state, paper being your

19   gold standard. You could have more electronic

20   versus paper votes.

21   MR. PEARSON: In the -- what is the

22   official?

23   MR. FLEMMING: It is not at this

24   point, we don't have it. The way that I'll

25   address this as best I can, the way the system

2   operates is electronic is always looking and

3   sensing the operation of the printer as best

4   it can. So in the event that it can detect

5   from a printer a malfunction standpoint as

6   soon as it detects any kind of malfunction it

7   stops the voting process at that point, okay,

8   and then that voting session would virtually

9   end and that voter would need to restart or

10   revote on it on a different machine. What

11   happens if it fails, that after you fail to

12   cast your vote and it's during the summary

13   which the summary is your electronic ballot

14   summary is your paper ballot.

15   MR. PEARSON: Each one of the votes

16   the transaction the person would have made

17   would be recorded sequentially up to that

18   last -- until that vote is cast so the person

19   would have had the opportunity to verify their

20   vote before they ever cast their vote, each

21   selection would be verified. So at that point

22   if the printer is still operational, you could

23   still go back and recreate that ballot. I'm

24   just saying worse case scenario, you still

25   have the ability just like you went on a paper

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2   ballot, go back and recreate that, that ballot

3   so if you do lose after the vote is cast and

4   there is a printer jam and you lose the

5   barcode for that record, if it jammed or

6   didn't print or got worn, whatever, destroyed,

7   you could go back in at least manually count

8   the vote selection there so you wouldn't lost

9   any of those for your verification process.

10   MR. FLEMMING: I guess that would be

11   verification of where it is the vote is not

12   until you hit that cast button which is when

13   the barcode and summary get contacts in.

14   MR. KERRIGAN: You do have a status

15   indication summary screen that's noted, so

16   when you first hit cast before it does the

17   vote summary there is a last voter press cast.

18   You would at that point say you hit cast and

19   disconnect, you're still going to have that

20   line that let's you know the voter cast.

21   MR. WOODBRIDGE: B2. The DRE should

22   generate and store a digital signature for

23   each electronic record. I believe that's the

24   case. B3. The electronic ballot image

25   records shall be able to be exported for

2   auditing or analysis on standards-based and/or

3   COTS (commercial off the shelf) information

4   technology computing.

5   A.   The exported electronic ballot

6   image records shall be in a publicly

7   available, non-proprietary format.

8   Steve, you testified I think we're

9   talking about the barcode status commercial

10   off the shelf material, correct?

11   MR. PEARSON: Yes.

12   MR. KERRIGAN: That data can only be

13   interpreted by our software. Once it is

14   interpreted it will stay with the file and

15   then it then be read.

16   MR. WOODBRIDGE: B. The records

17   should be exported with a digital signature

18   which shall be calculated on the entire set of

19   electronic records and their associated

20   digital signatures.

21   MR. KERRIGAN: We use low fiche for

22   our encryption of the data.

23   MR. WOODBRIDGE: Which doesn't

24   constitute a digital signature.

25   MR. KERRIGAN: That's correct.

2   MR. WOODBRIDGE: It says, the record

3   shall be exported with a digital signature,

4   nothing about the encryption part of it.

5   MR. PEARSON: We don't -- the system

6   does not individually digitalize the

7   signature. It doesn't have a digital

8   signature for each record, but it creates, it

9   uses encryptional algorithms to encrypt all

10 the data.

11   MR. WOODBRIDGE: The records shall

12 be exported with the encryption on the entire

13 set of associated digital signatures.

14   MR. PEARSON: If it's encrypted, yes

15 it's encrypted data. That's the answer.

16   MR. WOODBRIDGE: The voting system

17 vendor shall provide documentation about the

18 structure of the exported ballot image records

19 and how they shall be read and processed by

20 the software.

21   MR. PEARSON: We provide that as we

22 note in Chapter 61 of our electronic reporting

23 manual.

24   MR. WOODBRIDGE: D. The voting

25 system vendor shall provide a software program

2   that will display the exported ballot image

3   records and that may include other

4   capabilities such as providing vote tallies

5   and indications of undervotes.

6   MR. KERRIGAN: Same answer. As

7   mentioned, electronic encrypts all the voting

8   data from the EIN then you are able to

9   generate tallies for displaced undervotes and

10   statistic counter.

11   MR. WOODBRIDGE: The voting system

12   vendor shall provide full documentation of

13   procedures for exporting electronic ballot

14   image and records and reconciling those

15   records within the paper records. And we note

16   this is also the subject of exception number

17   eight.

18   MR. KERRIGAN: Yes, that is correct

19   in that we do not right now have that in our

20   curent documentation, but will implement it as

21   a result of this review. As I mentioned

22   before and as Professor Ansari said, this is a

23   lengthy and difficult process. It is a great

24   understanding of system and it is not a

25   standard operation. It's something we never

2   included. Even where we do include it in our

3   documentation, this probably would not likely

4   be included in standard. This is probably

5   anyone that's demonstrating the ERL has to be

6   a special case operation.

7   MR. WOODBRIDGE: Let me go back and

8   make sure I understand. Are you telling us

9   with regard to exception number eight that

10   NJIT cited with exception with regard to

11   exception R(4)B(1) that you expect you will be

12   able to provide that criteria?

13   MR. KERRIGAN: We note two and I

14   would argue that we are currently in the

15   document we provided at the on start of this

16   we were not compliant with 4(B)7(E) which is

17   standard document. No, we did not for the

18   initial review and we're going to add that.

19   But 4(B)1 is a separate issue we addressed at

20   the time the exception came up.

21   MR. WOODBRIDGE: So we're talking

22   about the documentation, you'll provide that.

23   MR. KERRIGAN: Right. There are two

24   points. General practice has been I don't

25   know if it's relevant on something that would

2   be a rare case like this and it will be

3   providing information, the inner workings of

4   how we store data on a flash card. That

5   information has to be very protected, so we

6   probably will release this in a technical

7   bullet that will be a bullet only. It would

8   be provided for certification with the

9   understanding this is not our standard

10 operating procedures not given as part of the

11 same users guide for this.

12   MR. WOODBRIDGE: You use that for

13 security purposes.

14   MR. KERRIGAN: Right.

15   MR. WOODBRIDGE: Next Section C,

16 Voting with a VVPRS. LPS shall promulgate for

17 voters instructions to use the VVPRS.

18   A. The VVPRS vendors shall provide,

19 in plain language, any reference material

20 requested by LPS to aid in the preparation of

21 the VVPRS instructions. These instructions

22 shall be issued to each county board. I do

23 know in the two boxes of material there were

24 instructions in there for board workers. I

25 don't know if they were contained for New

2   Jersey.

3   MR. KERRIGAN: We do have standard

4   operating procedures that's a preelection

5   checklist security protocols and it's noted we

6   have numerous amounts of documentation and we

7   do tailor that to county needs, location or

8   states, state specific requirements.

9   MR. WOODBRIDGE: B. Instructions

10   for use of a VVPRS shall be made available

11   prior to an election on the Division of

12   Elections' website and shall be available to

13   the voter at the polling place on election

14   day. You provide any charts or posters on how

15   to use the machine.

16   MR. KERRIGAN: The one, two, three

17   vote sequence instruction screen that you saw

18   on the DRE. We do have a post certificate of

19   that. I've seen counties go as far as to make

20   their own documentation. It's specific to

21   that polling location as far as giving them

22   information on where to key and where to

23   interact. Sometimes it gets localized.

24   MR. WOODBRIDGE: You have some

25   machines set up so you can vote on a dummy

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2   election and know how to.

3   MR. GREENHALGH: Yes. Just a couple

4   things on the website. ES&Svote.com is

5   actually a visual image of the voting machine

6   itself so anybody can get on, actually do it,

7   do a demo of the election right on their

8   computer which is kind of nice. What we

9   found, though, what is very affective working

10   with the counties on a specific election

11   because primaries are different from general

12   elections, voting instructions may be

13   different for a primary versus general, so

14   what we do with our counties is say, okay,

15   what kind of election do we have coming up,

16   what kind of demonstration ballot do you want

17   for general election or primary election and

18   what names do you want on it. We do it

19   recommend customized depending on what the

20   state wants. Certain states you can't use

21   what we call the dead presidents because

22   George Washington may actually be on the

23   ballot. So you have to come up with Mickey

24   Mouse or Donald Duck, so it depends on a

25   state.

2   MR. WOODBRIDGE: The question I

3   have, some of these bullets take set up

4   machines actually intended voting machines.

5   MR. KERRIGAN: I think having a

6   separate election of what we call BMW asking

7   what's your favorite car, are you in favor

8   with three day weekends in that set aside

9   location to allow the vote.

10   MR. WESLEY: Some of the things that

11   we've done in some of the implementations

12   we've actually, for example, in the state of

13   Indiana they required us to assemble a team

14   with the county that did voter education

15   events around the counties where they would go

16   to malls, they would go to schools. One thing

17   that I saw that was excellent they did in

18   Powell County, they took them to places like a

19   Lighthouse of the Blind, places like that

20   where people were visually impaired with a

21   demo ballot so they do use it prior to

22   election. The effect of that was people show

23   up at the poll and they would tell the poll

24   workers get out of the way, I know how to do

25   it. They would go right in and it was very

2   very easy.

3   MR. WOODBRIDGE: C. Prior to an

4   election, the county commissioners of

5   registration will provide demonstration

6   machines at convenient locations throughout

7   the county for voter education purposes.

8   D. The instructions for performing

9   the verification process shall be made

10   available to the voter on a location inside

11   the voting machine. Where feasible, the

12   instructions shall also be on the machine

13   ballot face. Tell me if I'm wrong, but can

14   you tell me how that machine gives you

15   instruction on how to vote.

16   MR. KERRIGAN: That was the first

17   screen you selected, how you wanted to

18   interaction through visually or audio then

19   next screen is one, two, three those could be

20   brought back up by the answer and the

21   questions at the bottom.

22   MR. WOODBRIDGE: So can you do that

23   in each set of instructions?

24   MR. KERRIGAN: This is procedural,

25   people have attached that sequence and take it

2   to the inside of the building.

3   MR. WOODBRIDGE: Two(C)2. Voter

4   privacy shall be preserved during the process

5   of recording, verifying and auditing ballot

6   selections. This includes a voter who uses an

7   audio voting device. Voters using an audio

8   voting device shall also be able to verify

9   votes privately and independently. I know

10   this was subject of exception number two and

11   three from the NJIT report.

12   MR. KERRIGAN: And I think we've

13   talked about both from physical privacy of

14   voting as well as the digital privacy of

15   voting.

16   MR. WOODBRIDGE: I guess to the

17   individual we talked about the voting machine

18   being collapsable and some of the procedures

19   of setting up your location, taking into

20   consideration your security and privacy for

21   the voter. Voters using audio verified votes

22   privately and independently so when you vote

23   and you finish, how do you know what you're

24   voting for.

25   MR. KERRIGAN: Similar to the visual

2   interface where you cast your vote, you scroll

3   using the four key panel when you get to the

4   end you are required to completely go through

5   the review screen, if you accept you have the

6   wait file telling your selections. It would

7   identify the contents and your current

8   selection and then if you were to press down

9   you would go to the next contest and it would

10   call out the contest and your selection and as

11   soon as you got to the bottom of that summary

12   which is being read to you, then that vote

13   button becomes enabled and when you reach the

14   bottom that's when the voter receives

15   instruction on how to when you reach the

16   bottom it's prompted, I can't remember the

17   exact wording tells them that the vote button

18   is located at the top of the machine and it

19   tells them the shapes of the button they are

20   interacting with so they could find the

21   buttons, press and as far as privacy that

22   screen is blank, we talked about that before.

23   MR. WOODBRIDGE: Paragraph Three at

24   the top of page eight, that section C(3). In

25   any election where the ballot contains a

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2   language in addition to English, the paper

3   shall be produced in all such languages.

4   A.   To assist with manual auditing,

5   candidate names on the paper record shall be

6   presented in the same language as used on the

7   DRE summary screen.

8   B.   Information on the paper record

9   not needed by the voter to performance

10   verification shall be in english. You don't

11   have any comments from NJIT on this issue, but

12   the assistant manual shall be presented in the

13   same language on the DRE summary, so that was

14   compliant.

15   4.   The privacy of voters whose

16   paper records contain an alternative language

17   shall be maintained.

18   MR. KERRIGAN: No voter

19   identification on the RTAL.

20   MR. WOODBRIDGE: I will read

21   portions of this next session because all

22   related to exception number one by NJIT.

23   C (5). The paper records shall

24   distinguish between accepted and non-accepted

25   ballots.

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2   A.   The voter shall have the

3   opportunity to accept or reject the contents

4   of his or her paper record.   Exception number

5   one.

6   1.   If the voter rejects the

7   contents of the paper record, he or she may

8   recast the ballot up to two additional times.

9   This procedure is consistent with current

10   State law, which limits the amount of time a

11   voter has to cast a ballot.

12   Next section Two.   Before the voter

13   causes a third and final paper record to be

14   printed, the voter shall be presented with a

15   warning notice on the machine that the

16   selections on the DRE will be final.   The

17   voter will see and verify a printout of the

18   votes, but will not be given additional

19   opportunities to change any vote.   The third

20   ballot cast shall constitute the final and

21   official ballot of such a voter.

22   And then same section one 5(a)3.

23   Upon rejecting a paper record, the voter shall

24   be able to modify and verify the selections on

25   the DRE without having to reselect all choices

2   in all contests on the ballot. And these all

3   relate to exception number one and of course

4   the issue we're struggling with here is the

5   issue of how many paper ballots you get and

6   you have any comments.

7   MR. KERRIGAN: I think in order to

8   properly talk about this issue we'd have to

9   come to the agreement of what the word cast

10   means. Our interpretation, generally the term

11   cast means that your ballot has been submitted

12   and at that point you're not allowed to make

13   any alterations. Now, I think true potential

14   of this criteria itself to allow the voter to

15   see their selections on paper and if they

16   don't like what they're seeing on paper, they

17   have an opportunity to alter votes, those

18   selections or lack therefore and I would feel

19   that our system is compliant in that

20   interpretation of the criteria.

21   As far as the number being three, we

22   have an unlimited opportunity or the voter has

23   an unlimited opportunity to make a selection

24   and all of those alterations or initial

25   selections will be noted onto the printer. So

2   the process with our system the real time

3   monolog, the process of accepting or rejecting

4   at the end of the ballot is not required

5   because the voter has immediately had the

6   opportunity upon making a selection to verify

7   it was recorded properly to the paper. We

8   also provide the summary screen at the end and

9   any alterations made there to the paper are

10   distinct indefinitely. The machine itself

11   does not restrict a voter to how many choices

12   or changes they wish to make.

13   MR. WOODBRIDGE: So there's no

14   warning, no risk once you get to it the final

15   paper outlet.

16   MR. PEARSON: You never reach that

17   point because you only queue once with this

18   system.

19   MR. WOODBRIDGE: I don't want to put

20   words in your mouth. I take it what you're

21   arguing, you might not meet the letter of this

22   but the spirit or intention of what the

23   content is.

24   MR. PEARSON: I think the language,

25   there was language that attempted to allow for

2   all types of systems reel-to-reel and not in

3   all cases did they think through when the

4   legislation was drafted how the reel-to-reel

5   systems performed, so I think they need to

6   look at what the intent of the law was versus

7   the let alone interpretation because with this

8   system with the reel-to-reel system like ours

9   you'll never reach the second opportunity to

10   cast or the third. You only cast once.

11   MR. KERRIGAN: The term cast means

12   action by the voter. If you read the laws to

13   interpret cast means submitting your ballot

14   then I would argue this would not be legal to

15   have more than one cast because once you

16   submit your ballot the same paperwork you drop

17   it into the ballot, you are not able to

18   retrieve that ballot. So with our

19   interpretation of the word cast meaning making

20   a selection or nominating a candidate by

21   highlighting his name, we meet the letter of

22   the law.

23   MR. FLEMMING: If you take your

24   interpretation, before you put it in the

25   ballot box you could go get a second paper and

2   throw it away before it goes into the box.

3   MR. KERRIGAN: You do have to score

4   ballots with DRE it's not as necessary as it

5   is with paper where they could false mark and

6   they are unable to unmark that selection. DRE

7   gives you the ability to make and unmake

8   selections. So you don't spoil the

9   traditional paper you have the ability to say

10   here is more than one ballot presented on the

11   machine, a coworker could pull up the ballot,

12   they may have to cancel the voter, the ballot

13   that would be recorded a vote is cancelled but

14   there's no need DRE that's the intent with DRE

15   is to increase voter awareness of properly

16   voting, preventing overflow, things like that

17   and most other things go away with DREs

18   existed with paper.

19   MR. WOODBRIDGE: Some of these

20   issues will crop up again and we will talk

21   about them. Any other comments.

22   MR. MAHONEY: No.

23   MR. WOODBRIDGE: Okay. Five A 4.

24   If a mechanical error in recording or printing

25   a paper record occurs, the record shall be

2   counted as a spoiled paper record. It will

3   not be counted as one of the voter's three

4   attempted votes. And this represents two

5   exceptions both nine and ten which I'll read

6   to you.

7   This is exception nine. Neither the

8   DRE nor the VVPRS can detected a paper jam.

9   When paper jam occurs, the voter can still

10   make or change selections on the DRE and cast

11   the ballot as normal. However, the printer

12   keeps printing over the same area on the paper

13   roll making it illegible. No audio or visual

14   warning signal is given to either the voter or

15   the poll official. The vote is electronically

16   recorded and counted. The paper jams were

17   observed in both single tests and the two

18   volume tests. One paper jam during the 14

19   hour test even resulted in paper torn apart,

20   in which case selections and barcodes were not

21   printed. And it also led to exception ten.

22   If the printer cable is disconnected after the

23   voter presses the VOTE button, the ballot is

24   electronically recorded and counted in the

25   close-poll report. Yet, no barcode is printed

2   on the paper record, and the cancellation of

3   the ballot is indicated on the DRE screen and

4   the Event Log report. So there are a couple

5   of issues here first of all, is there such a

6   thing as a spoiled paper record in your

7   system.

8   MR. KERRIGAN: Yeah in the sense it

9   cancels the ballot at the DRE, then that paper

10   record the actions made on the paper record

11   previously were not recorded to the

12   electronic.

13   MR. WOODBRIDGE: But the voter

14   cannot spoil a ballot, the machine can because

15   of malfunction.

16   MR. PEARSON: Or withholding or

17   intervention insert the PEB, the opportunity

18   to cancel.

19   MR. WOODBRIDGE: I think they are

20   talking about here, one, two and three

21   different paper ballots and the machine may be

22   one or two of that selection.

23   MR. KERRIGAN: I would say that

24   criteria is written for a receipt printer.

25   You're talking about verification at the end.

2   We have a method, it is not a final

3   verification at the end where you submit paper

4   record, but if I may talk to some of the other

5   points that you brought up.

6   Exception nine I believe is

7   erroneous that neither the DRE nor the VVPRS

8   can detect paper jams. We've already spoken

9   to the system that we do have in place. There

10   is on board technology that attempts to

11   protect any malfunctioning of the printer.

12   There's also an addition to those systems.

13   There is a tension arm on the reel-to-reel.

14   If that tension doesn't exist anymore for

15   instance, if you were to tear the ballot and

16   that arm no longer has the tension on the

17   paper, then that would be a failure in the

18   hardware and that would be detected by the

19   printer and subsequently by the poll worker,

20   so there are things in place and that is

21   inaccurate to say across the board that they

22   are not able to detect the paper jam.

23   MR. WOODBRIDGE: You have any idea

24   why NJIT had some opposition to this issue.

25   MR. KERRIGAN: None without being a

2 part to the testing, nor knowing how the paper

3 jam was produced we have no way of knowing.

4   MR. PEARSON: Before you have

5 someone come up, as I mentioned we ARE

6 accepting inoperability on any condition on

7 the printer to be able to stop that voting

8 session and notify the voter that the voter

9 needs to be notified. There are cases where

10 the voter is selecting and verifying. If the

11 paper is not advancing, they would also

12 visually could actually visually detect that

13 the printer is not advancing and their

14 selection is not being printed prior to the

15 system knowing that the paper is hung up for

16 whatever reason. So that would be another

17 opportunity for the voter verified paper

18 system to say, hey, my vote's not coming up

19 here, there's something wrong.

20   MR. WOODBRIDGE: I know Kevin you're

21 going to have to leave in a few moments. You

22 have any comments on the paper jam?

23   MR. DARER: It's hard for us to

24 reconcile in your experience is it possible

25 the jams you had.

2   MR. ANSARI: My name is Nirwan

3   Ansari from NJIT. The paper jams are not

4   unique. It happened quite often during our

5   test and we have some of the pictures we took

6   about the paper jams and there wasn't any

7   signal and I have a picture about when it is

8   stuck then the machine freeze up and no action

9   whatsoever afterwards.

10   MR. WOODBRIDGE: Is it possible the

11   tension arm broke and gave a signal if there

12   is a problem with the paper.

13   MR. KERRIGAN: Yes. As he just

14   explained, if there is an error detected there

15   is a visual warning on the screen as well as

16   audio associated warning. It explains there

17   is a printer malfunction, contact the poll

18   worker and as we discussed before, the

19   subsequent procedure would be a problem which

20   would have to be rectified. You have to get

21   the printer back on line and you have to start

22   a new voting session.

23   MR. WOODBRIDGE: It sounds to me,

24   you said no audio visual warning signal was

25   given; is that correct?

2   MR. ANSARI: In one location the

3   paper was torn, only one location happened

4   during the test in which case --

5   MR. KERRIGAN: Was the paper

6   completely torn?

7   MR. ANSARI: It's jammed and then

8   torn apart and at that time it all froze.

9   MR. KERRIGAN: The reason I make

10   that distinction, as soon as that paper

11   becomes completely torn up it's going to have

12   tension on the reel-to-reel and it will have

13   to be shut down. If it's jammed and

14   successfully printing albeit over and over

15   again the same area, then there's no printer

16   error. The printer is working, but the paper

17   isn't incoming and that's where Steve was

18   explaining in a voter verified system you have

19   to allow them to vote on their own. It is up

20   to them to recognize my voter verifiable paper

21   is not in coming.

22   MR. WOODBRIDGE: You also used the

23   word paper jams. How many times have you had

24   jams.

25   MR. ANSARI: Altogether five times.

2   Twice in the 14 hour test, three times 1200

3   vote test.

4   MR. KERRIGAN: Another unknown to us

5   is how it was loaded, whether it's loaded

6   properly.

7   MR. WESLEY: If I could interject.

8   MR. KERRIGAN: We weren't party to

9   the testing.

10   MR. WESLEY: I'm sorry. During our

11   installation in West Virginia we kind of ran

12   into that same issue during the training

13   session when we were training where some of

14   the folks were loading the paper incorrectly

15   and I addressed that issue with the state as

16   well as with their trainers and showed them

17   the correct way to load the paper and we've

18   done multiple elections where that have not

19   been an issue. So without being a part of it

20   it's kind of difficult to know the

21   circumstances surrounding that, but I suspect

22   that the paper was not input properly.

23   MR. ANSARI: I would like to contest

24   about it. I think we did place the paper very

25   properly. I instructed all my students make

2   sure the paper, we want to minimize our error

3   we don't want to create any error. We even

4   have some pictures of how this is, the torn

5   paper and we also have some pictures in which

6   the printer keep printing on the same area and

7   I believe we did our very best to load this.

8   I don't think this needs any genius to load

9   any paper. I told my students to load them

10   very carefully.

11   MR. MAHONEY: Before the training

12   before NJIT started were they shown by ES&S

13   how to install the paper so they were

14   correctly informed about that.

15   MR. PEARSON: By myself.

16   MR. WOODBRIDGE: We have exception

17   ten. It says: If the printer cable is

18   disconnected after the voter presses the VOTE

19   button, the ballot is electronically recorded

20   and counted in the close-poll report. Yet, no

21   barcode is printed on the paper record, and

22   the cancellation of the ballot is indicated on

23   the DRE screen and in the Event Log report.

24   MR. KERRIGAN: I think we spoke

25   about this before in the sense I did identify,

2   we do indicate the sessions that you're at on

3   your vote when you're in voting modemode all

4   your actions are recorded when you enter the

5   summary modemode that line is printed on the

6   printer and then when your vote when you hit

7   that print button, you immediately your vote

8   is cast so if the printer becomes disconnected

9   after that point and you lose your vote

10   summary as well as your barcode as Steve

11   Pearson mentioned you're still able to

12   recreate that ballot from that audit trail

13   from the real time audit.

14   MR. WOODBRIDGE: But you're

15   saying --

16   MR. KERRIGAN: Yeah, essentially if

17   the printer becomes disconnected to even go

18   further if it becomes disconnected prior to

19   your voting or if you're going to try to

20   ensure that's one reason we should have done

21   the machine if that printer becomes

22   disconnected during that audit trail, during

23   the voter session itself and we don't allow

24   you to vote without that printer being

25   connected because we do need that to reconnect

2   the ballot on the ballot record.

3   MR. WOODBRIDGE: VVPRS shall be

4   designed to indicate the paper record which

5   the voter has identified and cast as his or

6   her official ballot.

7   We have the next section which we

8   don't appear to have any exceptions to. I'm

9   going to read them quickly.

10   Paragraph Five, Security and

11   Liability. The VVPRS shall not be permitted

12   to externally communicate with any system or

13   machine other than the voting system to which

14   it is connected.

15   B. The VVPRS shall be able to

16   function as a printer; it shall not contain

17   any other services for example, copier or fax

18   functions or network capability. I think that

19   is correct.

20   MR. KERRIGAN: Correct.

21   MR. WOODBRIDGE: The printer shall

22   not contain any component with an external

23   communication feature. That's correct too.

24   MR. PEARSON: Yes, that's correct.

25   MR. WOODBRIDGE: C. The paper path

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2   between the printing, viewing and storage of

3   the paper record shall be protected and sealed

4   from access, except by election officials

5   authorized by each county commissioner of

6   registration.

7   MR. PEARSON: That's correct.

8   MR. WOODBRIDGE: All cryptographic

9   software in the voting system shall be

10   approved by the U.S. Government's

11   Crypotgraphic Module Validation Program, if

12   applicable, prior to being certified in New

13   Jersey.

14   One. As stated in the discussion

15   portion of Section 7.9.3 of the United States

16   Election Assistance Commission draft criteria

17   for Voter Verifiable Paper Audit Trail

18   REquirement, There may be cryptographic voting

19   schemes where the cryptographic algorithms

20   used are necessarily different from any

21   algorithms that have approved CMVP,

22   Cryptographic Module Validation Program

23   implementations, thus CMVP approved software

24   should be used when feasible but is not

25   required. The CMVP website is

2   www.csrc.nist.gov/cryptval.

3   The vendor shall provide a

4   certification of CMVP approval, if applicable.

5   If not applicable, the vendor shall provided a

6   certification setting forth the reason why

7   CMVP approval does not apply.

8   MR. KERRIGAN: It is certified by

9   CMVP.

10   MR. WOODBRIDGE: The printer under

11   Exception Number Five is noted here. The

12   printer shall be connected to the voting

13   machine either by concealing the printer

14   connection or via a security tag to prevent

15   tampering; is that right?

16   The roll of printed paper records is

17   accessible upon unlocking the printer cover.

18   The cable connecting for the VVPRS

19   to the DRE is exposed and can be easily

20   disconnected from the printer port on the top

21   of the DRE.

22   MR. KERRIGAN: We are compliant as

23   required. It says you have to secure it

24   either or with a security tag and we are able

25   to provide a security tag over the connection.

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MR. WOODBRIDGE: Comments on that

section?

Section F. The DRE shall detect and

notify the election officials at the polling

place of any errors and malfunctions, such as

paper jams or low supplies of consumables, for

example, paper, that may prevent paper records

from being correctly displayed, printed, or

stored. I think we talked about paper jams.

MR. FLEMMING: Yes.

MR. WOODBRIDGE: Quite a bit. Any

other comments on this? Nothing.

MR. FLEMMING: I want to make sure

the notification is to the voter not the

elected official.

MR. KERRIGAN: If the printer error

appeared while the supervisor was printing the

ballot, yes, they would be present up to that

point when they then leave the voter in

privacy to vote.

MR. FLEMMING: Let's say the voter

decides not to tell anybody there's a problem

and the next one comes in, will the voting

then see a problem now.

2   MR. KERRIGAN: That would be on the

3 screen and voters don't activate our screens,

4 supervisors do. We constantly have that

5 interaction between machines and pollers and

6 another session could be started without the

7 supervisor maintaining the paper error.

8   MR. WOODBRIDGE: Any other comments?

9   MR. MAHONEY: No.

10   MR. WOODBRIDGE: If a mechanical

11 error or malfunction occurs, such as, but not

12 limited to, a paper jam or running out of

13 paper, the DRE and VVPRS shall suspend voting

14 operations, not record votes, and present a

15 clear indication of the malfunction to the

16 voter and election officials.

17   This goes to exception number nine

18 but what's interesting about this, I'm reading

19 it but it appears to me if you do have a jam

20 it stops the voling, doesn't record the votes.

21 What do you think, no?

22   MR. FLEMMING: About the voting

23 machine, if it detects the error it will

24 suspend it so the voter has to go in another

25 session.

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2   MR. WOODBRIDGE: I don't think that

3   was consistent with the other section.

4   MR. FLEMMING: The question I really

5   have is that the clarification to the voters,

6   that's clear, but the clarification to the

7   elected official is not.

8   MR. KERRIGAN: Because the voter

9   cannot proceed any further and no voter would

10   be able to use that machine. The only next

11   interaction would be the poller. So that the

12   same message is presented to both the voter

13   and the poller. Obviously a poller can't

14   linger around the machine and they have to

15   lead the voter to privacy. Every error

16   message is initiated with an audible feature.

17   MR. WOODBRIDGE: I see that, by one

18   indication of someone away from the machine.

19   I should have brought that up earlier. I'm

20   just noting with some interest that there's a

21   conflict between the sections.

22   Roman numeral III(A)2 and this

23   section being B, to the section if there's a

24   malfunction the paper jam suspends operation,

25   so it makes you wonder whether or not they

2   kept repeating criteria there.

3   MR. KERRIGAN: I'm sorry, I have to

4   excuse myself.

5   MR. WOODBRIDGE: I appreciate you

6   coming. Here have a good trip to Paris. Any

7   comments with regard to section G.

8   Section H. This relates to an

9   exception from NJIT. It says, If the

10   connection between the voting machine and the

11   printer has been broken, the voting machine

12   shall detect and provide notice of this event

13   and record it in the DRE's internal audit log.

14   Voting operations shall be suspended and no

15   votes shall be recorded. I guess the question

16   I should ask is if the connection is broken,

17   is it recorded in the DRE auditaudit log.

18   MR. PEARSON: Yes, between the

19   iVotronic and the printer, yes.

20   MR. WOODBRIDGE: So it's something

21   that's printed.

22   MR. PEARSON: Yes.

23   MR. WOODBRIDGE: And we talked about

24   Exception Ten. It relates to the issue of the

25   voting and employment, so we won't -- we've

2   gone over that already.

3   The next section goes to -- we don't

4   have any exceptions to that, so I'm going to

5   go through them as quickly as I can.

6   I.   If the voter's selections on the

7   DRE do not match the paper record, then the

8   DRE shall immediately be withdrawn from

9   service.

10   1.   The affected voter shall be able

11   to vote on another voting machine, if

12   available, or by emergency ballot.

13   J.   The vendor shall provide to LPS

14   documentation for the DRE and the VVPRS that

15   includes procedures for the recovery of votes

16   in case of a malfunction. And I believe I've

17   seen some of that in the documentation if I

18   remember correctly. LPS shall be responsible

19   for disseminating this information to the

20   county commissioners of registration. That

21   information has been provided.

22   MR. PEARSON: We provided.

23   MR. WOODBRIDGE: The vendor shall

24   proved to LPS documentation for the DRE and

25   the VVPRS that includes recommended procedures

2   to enable the election officials to return a

3   voting machine to workable status after the

4   machine has malfunctioned, the printer needs

5   to be replaced or a voter used it incompletely

6   or incorrectly.

7   1.   These procedures shall not cause

8   discrepancies between the tallies of the

9   electronic paper records.

10   2.   LPS shall be responsible for

11   disseminating this information to the

12   commissioners of registration.

13   So tell us a little bit about your

14   job with regard to paper records.

15   MR. PEARSON: Sorry, I can't go into

16   detail on this. I know we have, our answer is

17   we provided it's included in our standard

18   operating procedure for poll workers. So I

19   don't have any detail on the specifics of

20   what's in those procedures.

21   MR. GREENHALGH: It depends on what

22   the state law is, depends on what the official

23   ballot is, we gauge our recommendation based

24   on that. If the official ballot is something

25   like the internal audio records that's the

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2   flash cards or machine, then procedure would

3   be different. Second, it depends when this

4   happens a lot of this occurs during the

5   official canvas which is after the election

6   and we're very, very careful to go over

7   precisely how to do an audit on a receipt

8   printer base versus what's the receipt record,

9   so it depends on state law.

10   MR. WOODBRIDGE: You provide

11   documentation in those scenarios.

12   MR. GREENHALGH: Yes, we do.

13   MR. WOODBRIDGE: Vendor

14   documentation shall include procedures for

15   investigating and resolving printer

16   malfunctions including, but not limited to,

17   printer operations, misreporting of votes,

18   underreadable paper records and process

19   failures.

20   MR. PEARSON: We provided that

21   documentation.

22   MR. WOODBRIDGE: M. If a machine

23   malfunctions or becomes inoperable, voters

24   will be entitled to vote by emergency ballots.

25   You provided emergency ballots. I probably

2   should be addressing this to Marge and Abbey.

3   MS. McCABE: Yes, we do. We have a

4   box attached to the back of the machine

5   currently.

6   MR. WOODBRIDGE: And pencils and

7   clipboards and stuff.

8   MS. McCABE: We have to tell you

9   with DRE, we never once in the history used it

10   once.

11   MR. PEARSON: Of course if there's

12   other machines, the voter would be directed to

13   the machine.

14   MR. WOODBRIDGE: I'm not going to

15   read Roman Number VI, Certification A through

16   C because it's not really relevant to this

17   particular to the vendor, but I am going to

18   read section C 1 and 2 subsection.

19   The vendor shall provide to the

20   State, electronically and in hard copy, all

21   use and technical specifications and

22   documentation relating to the function of the

23   VVPRS.

24   2.   The vendor shall submit a

25   certification that VVPRS satisfies the State's

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2   criteria. I believe I saw in a letter

3   indicating --

4   MR. PEARSON: Yes, we'll get those.

5   MR. WOODBRIDGE: Certification

6   Section VI D. A VVPRS shall not, at any time,

7   contain or use undisclosed hardware or

8   software. The only components that may be

9   used in a system are components that have been

10   tested and certified for the use in The state.

11   MR. PEARSON: We follow all state

12   and federal regulations.

13   MR. WOODBRIDGE: Up indicated there

14   is some hardware you're now having certified;

15   is that correct?

16   MR. PEARSON: Actually hardware and

17   firm ware and software, our entire 40 suite,

18   that includes the 9.2 that was examined here

19   that is going to be certified and also

20   includes the addition of the setting up

21   capability for the ADA capability, so there's

22   change to the software suite, all of the

23   Calcuter firmware as well as some hardware

24   modification such as adding the set up to the

25   electronic.

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2   MR. WOODBRIDGE: The vendor shall be

3   required -- Roman Number VI, Section E. The

4   vendor shall be required to provide the source

5   code for the DRE and the VVPRS to the State,

6   a/or to place such source code in escrow, to

7   allow for independent testing by the State, at

8   its discretion. Upon request, the State will

9   enter into non-disclosure agreement with the

10   vendor. Did I see that agreement in your pack

11   of material.

12   MR. PEARSON: I don't recall. I

13   believe we would have executed that. We're

14   usually pretty careful and cautious about

15   that.

16   MR. WOODBRIDGE: Everything is

17   deposited with the state or third party

18   agents.

19   MR. PEARSON: In the past we have in

20   the current state that it's their hands right

21   now until testing one is completed then that

22   will then be deposited to the NSRL, not the

23   source code but the executable put on deposit

24   there and then the source would be put on

25   deposit with an independent escrow agent. We

2   use Iron Mountain, so all of our code is in

3   escrow. That's standard practice.

4   MR. WOODBRIDGE: You always test

5   with NTIS too.

6   MR. PEARSON: The new requirements

7   by the EAC that's what the new bill says that

8   they have is once the trusted bills are

9   complete before you get into the testing then

10   we basically lose custody of that object code

11   and then that code gets about by order of the

12   EAC for EAC then the VSTL will then deposit

13   that at NSCRL software by reference and it's

14   held there and then that would be used

15   downstream for any software validation

16   confirmation. You can confirm the source code

17   from any system to what's been certified.

18   That's the process today.

19   MR. GREENHALGH: Now the states may

20   require their own escrow procedure and when

21   that occurs, then we spell out the

22   circumstances under which the source vote

23   could be accessed and that's where the company

24   goes in bankruptcy. A lot of states do that

25   they require separate source codes with their

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2   assigned escrow agents.

3   MR. PEARSON: We're prepared to

4   provide the escrow source for New Jersey as

5   required.

6   MR. WOODBRIDGE: Six F. The vendor

7   shall be responsible for the cost of any

8   testing of the VVPRS that the state deems

9   necessary to achieve certification.

10   MR. PEARSON: We're used to that.

11   MR. WOODBRIDGE: Six G. Vendor

12   documentation shall include printer

13   reliability specifications including Mean Time

14   Between Failure estimates, and shall include

15   recommendations for appropriate quantities of

16   back up printer and supplies. It may have

17   been there in all the papers. I didn't see

18   them.

19   MR. PEARSON: We are, the system is

20   certified to the 2002 federal standard PPS and

21   that one is the measurement that is used.

22   MR. WOODBRIDGE: That includes the

23   Mean Time.

24   MR. PEARSON: That is specifically

25   we've listed ten volumes, it's in one of the

2   volumes the 2002 standard. We can provide you

3   that Roman Numeral VI I. Mean Time Between

4   Failures, which measures the reliability of a

5   voting system device, is the average time that

6   a component works without failure. It is the

7   value of the ratio operating time to the

8   number of failures which have occurred in the

9   specific time interval.

10   Seven. Pre-Election Procedures. A

11   VVPRS's component shall be integrated into the

12   existing local logic testing procedure

13   performed by county election officials, which

14   are performed in preparation for an election.

15   I believe there are some documentation of that

16   in the two big boxes we got, but you're not

17   going to explain what to do. We provide

18   pre-election procedures in the technical data

19   package that's submitted and there's a

20   pre-election checklist and I'm sure that

21   Sussex County probably has their own set of

22   instructions as well that they would

23   incorporate into their procedures. We learn

24   from our vendors too to incorporate their

25   procedure, but we have provided those

2   procedures.

3   MR. WOODBRIDGE: Section Roman

4   numeral Eight A through C relate to items that

5   aren't relevant to this and primarily relate

6   to procedures at state level, so I'm going to

7   jump down to Roman numeral D as in David.

8   In case the machine cartridge

9   becomes unreadable or is damaged for an audit

10   or recount, the county commissioner of

11   registration shall produce the ballot image

12   audit log from the machine. The vendor shall

13   provide LPS documentation the protection of

14   such audit log. Now, we understand you don't

15   have, you have a cartridge, but you have a

16   changeable spool so I guess the remainder of

17   the question, you obviously keep an image in

18   the machine, a cartridge that tests, as Kevin

19   said before, not a PDF type of image.

20   MR. PEARSON: All that information

21   is stored on a compact flash card and when

22   it's pulled, it's retained as another means of

23   auditing.

24   MR. WOODBRIDGE: Roman numeral

25   Eight, Section E. The paper record shall be

2   created such that its contents are machine

3   readable for purposes of any recount, audit or

4   initial tallying of an election in the event

5   that the machine cartridge containing the

6   electronic record is not usable.

7   1.   The paper record shall contain

8   error correcting codes for the purpose of

9   detecting read errors. This may be done by

10   barcode. This is redundant for what we have

11   already talked about if I'm not missing

12   something.

13   F.   If a county employs a

14   "Continuous Spool" VVPRS, it shall conduct any

15   audit or recount in accordance with the

16   procedures established audit by LPS to fully

17   protect the secrecy of all votes cast. Such

18   procedures include, but not be limited to,

19   cutting the spool-to-spool paper roll into

20   individual paper records, and restricting

21   public access to uncut paper roll. I guess

22   this really doesn't apply to a machine as

23   such.

24   MR. PEARSON: Other than provide

25   adequate space between voting sessions to

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2   provide cutage.

3   MR. WOODBRIDGE: G.   The vendor

4   shall proved LPS written procedure to identify

5   and resolve any discrepancy between an

6   electronic record and its corresponding paper

7   record. LPS shall be responsible for

8   disseminating this information to the county

9   commissioners of registration.

10   H.   The vendor shall provide written

11   procedure for determining what constitutes

12   clear evidence that a paper record is

13   inaccurate, incomplete, or unreadable. LPS

14   shall be responsible for disseminating this

15   information to the county commissioner of

16   registration. So there are two issues here.

17   One is written procedure identifying

18   discrepancies between electronic records and

19   paper records. I've just had a similar

20   criteria for this earlier and also provide

21   written procedure clear evidence and the paper

22   record is inaccurate or unreadable. I'm

23   especially interested in your response to that

24   section H. in regards to paper records to

25   inaccurate or unreadable and unwritten

2   procedures. You have to assist the county

3   with those problems.

4   MR. PEARSON: First of all, we've

5   never had a discrepancy. We've been 100%

6   accurate with the electronic and the RTAL as

7   evidence of our latest testing as well as the

8   extensive use in the elections to date, but

9   the documentation that would determine if

10   there was any inaccuracies or discrepancies

11   would be the documentation for your logic and

12   accuracy procedure prior to an election and

13   then any of the auditing procedures at the

14   conclusion of the election, post election to

15   be able to identify. So there's a multitude

16   or multiple methods to determine if there are

17   discrepancies of which would provide

18   documentation for all those procedures.

19   MR. WOODBRIDGE: And with regard to

20   the state's views of systems like this, are

21   they provided with this kind of documentation?

22   MR. PEARSON: Standard procedure.

23   It was required by May 6th. It's required by

24   the 2002 standard to have that level of

25   documentation.

2   MR. GREENHALGH: To clarify, some of

3   the states we deal with do a mandatory recount

4   of x number of precincts which require you to

5   take the paper record from the printer and

6   compare it to the electronic. I think it

7   varies between two and five percent. What we

8   do is prepare instructions for the county on

9   how to do that and normally there's lots of

10   manual work involved because you're basically

11   taking paper records, trying to read all the

12   valid images and compare them to the

13   electronic records. We're very careful

14   because that's where mistakes could be made

15   because people are in our system, we say make

16   sure you look at the bottom of the vote

17   record, that voters choice can change at the

18   end. The way Jane has done it in West

19   Virginia is read from the bottom up and

20   compare it manually and compare it with the

21   machine records and they have to sign off if

22   they agree on every office total number of

23   votes they sign off on it and then they meet.

24   MR. WOODBRIDGE: The summary at the

25   bottom of each and every trail cast should be

2   what's totalized in the machine, right?

3   MR. GREENHALGH: Yes, exactly.

4   MR. FLEMMING: The states that you

5   are in right now, what are they using for the

6   gold standard, which one wins?

7   MR. GREENHALGH: It depends on the

8   state, what the official ballot, the gold

9   standard is the paper the RTAL printer that is

10   the official ballot. Now, there's some data

11   about whether that's going to be retained.

12   They are not quite sure whether it's going to

13   be retained. It takes a lot of manual effort.

14   That's where you run into, do a lot of work

15   where you manually are counting those

16   individual ballots, the electronic records.

17   So there is some discussion about changes.

18   MR. FLEMMING: How are the states

19   using the paper as dealing with paper jams and

20   ballots that are not quite complete.

21   MR. GREENHALGH: We're fortunate

22   with the precinct we selected.

23   MR. PEARSON: They would perform

24   them in the same manner we discussed.

25   MR. FLEMMING: Paper is your gold

2   standard, and it has three less votes and your

3   electronic has three more votes. If that's

4   your standard paper, you go with both.

5   MR. GREENHALGH: Right.

6   MR. FLEMMING: The document says.

7   When you look at a system with a printer I

8   foresee, I'm not arguing with you, but you say

9   you never had it, all printers have issues

10   could be a rainy day outside and the paper

11   rose or shrinks however it is out there,

12   that's my concern.

13   MS. GREENHALGH: The state of West

14   Virginia has now decided to go back to the

15   gold standard which will be the DRE. They

16   were paper, they've gone back. Now we've

17   never had where we didn't have them match but

18   they don't like the idea of yes, the printer

19   is a printer.

20   MR. FLEMMING: In New Jersey it will

21   be printer.

22   MS. GREENHALGH: They were and now

23   they've gone back.

24   MR. WOODBRIDGE: The good news is

25   we've finished walking through the criteria.

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2   The bad news is we still have some more

3   business to do. In particular, there are two

4   exceptions that NJIT raised that we want to

5   address and then we have some new business.

6   Some of this, incidentally, it might benefit

7   from the experience of Sussex County so I

8   think the timing couldn't be better.

9   Exception Number 11, A person who possesses

10   the supervisor Personalized Electronic Ballot,

11   PEB, can activate a ballot in a few seconds

12   without any cross-checking with the Poll Log.

13   Using a supervisor PEB, any person can cast as

14   many ballots as he or she wants.

15   MR. PEARSON: We prepared a lengthy

16   response to you that I could go through.

17   MR. WOODBRIDGE: Give us a short

18   version of that.

19   MR. WESLEY: Our demo I think we

20   actually showed on the machine that before

21   that ballot when the poller puts it in before

22   that ballot would come on the screen he's got

23   to remove that PEB, that's functionality,

24   that's very important that we put on the

25   machine, wheeled into the machine so it forces

2   them to take possession of that PEB and I

3   think and I and Sussex county can attest

4   they've just drilled that into the importance

5   of that board keeping that PEB in their

6   possession.

7   MR. PEARSON: That was our first

8   point and PEBs are only distributed to

9   authorized elected officials, so they are not

10   to leave their possession. The second thing

11   is only PEBs programmed for the election is

12   loaded on the machine will grant access so we

13   have security measures in place to prevent

14   anybody else from putting in a PEB for

15   instance. We've talked about those and I

16   don't think we need to get into those

17   scenarios.

18   MR. WOODBRIDGE: The real scenario

19   is seen in this piece of paper pad, you go the

20   election board worker, go in the thing, you

21   push a button, pull a curtain, do your vote

22   and walk out. I guess the concern here, I

23   assume, tell me if I'm wrong that can be used

24   to activate a machine as many times as you

25   stick it in the hole.

2   MR. PEARSON: That is correct.

3   MR. WOODBRIDGE: And my assumption

4 is just to be ridiculous that you can keep

5 doing this and they will keep doing this and

6 you can add 5,000 votes on the machine in

7 theory, but that might not match the number of

8 people.

9   MR. PEARSON: You have the totals in

10 your vote plus you have counters. No

11 different than paper ballots today actually it

12 is a little easier for someone I would guess a

13 poll worker that would be I guess fraudulent

14 to take a stack of ballots and mark a bunch of

15 ballots. It's probably easier to detect a

16 discrepancy in this system than it would be

17 paper ballots until after the fact.

18   MR. WOODBRIDGE: Just taking a look

19 further, I'm not sure what we described is not

20 true to almost anybody, activate almost any

21 machine of course the machine does it keep

22 voting on that machine, but you got 25,000

23 votes and five voting.

24   MR. PEARSON: We've tried to

25 implement security but check and balances and

2   a couple good procedures that Marge could

3   probably address better than anybody in this

4   room to protect against that. That is a

5   reality that can happen.

6   MR. WOODBRIDGE: Let me go into the

7   last exception here unless NJIT has any other

8   comments on this issue, yes.

9   MR. ANSARI: Actually this issue is

10   does not really go to any criteria, doesn't

11   affect the end result, but I got a response

12   from ES&S that we did not follow the correct

13   operating procedure. Let me just try to

14   respond that we did follow what's given, the

15   procedure given by Kevin and when we have this

16   problem occur to us, we sent an email to

17   Kevin. Kevin also give a couple solutions.

18   one of the solutions solved it temporarily.

19   That means we can continue to vote but for

20   another five to 75 votes depending on it's

21   quite random, we don't know what the reason

22   why and the problem come again. It just give

23   you all this warning message that we don't

24   understand.

25   MR. WOODBRIDGE: That's the next

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2   exception we haven't gotten into is what we're

3   really dealing with we'll put you on the

4   record on this and maybe it's a good way to

5   sedway into that section.

6   MR. ANSARI: I thought you were

7   talking about --

8   MR. WOODBRIDGE: Section Eleven that

9   you can activate the machine as many times as

10   you want, but then you can activate almost any

11   machine as many times. The issue I am

12   interested in is the next one and I think this

13   is where it might be useful to have someone

14   speak on this. Exception 12, During the

15   volume test, after approximately 250 votes had

16   been cast, the DRE machine produced a warning

17   message when the same supervisor PEB was once

18   again inserted to activate the subsequent

19   ballots. This warning message continued for

20   subsequent votes. While this warning did not

21   preclude the voter from voting, the event log

22   showed a warning message that was not

23   understandable. I would ask the vendor

24   exactly what are we looking at.

25   MR. PEARSON: I would like to

2   address this. First of all, we have looked at

3   this condition and we've never seen it before,

4   we've never and that is true. We took it to

5   our engineering lab and our developers the

6   condition that was stated in Exception 12 has

7   never been witnessed by ES&S. So, the

8   comments that we have that were provided by

9   NJIT are not specific enough and we really

10   would like to have more information so we

11   could try to research this. It's never

12   happened in any of the testing that that

13   systems has gone through seven years of

14   qualifications they've been certified by

15   dozens probably two dozen times. They've been

16   run through thousands of tests and analysis do

17   occur and we are certainly interested in those

18   and we would like to be able to try to

19   recreate that and address it, but at this

20   point without further, more information it's

21   difficult for us to assess.

22   MR. WOODBRIDGE: Any remarks on why

23   this have occurred and what exactly did you

24   get on the screen.

25   MR. PEARSON: We need all the test

2   cases and steps that led up to this event.

3   MR. ANSARI: One question I would

4   like to ask you also. In your experience does

5   the machine go up to 250 votes. That's why

6   you never got to that experience, we

7   experienced it when we got up to that.

8   MR. GREENHALGH: Oh, yes we did. I

9   had as many as 4,000 votes and we never had,

10   we don't have any limits.

11   MS. KLUSKA: If I may interject, I

12   don't know what the description was of what

13   they saw.

14   MR. ANSARI: The error message you

15   can see this, these are the error messages on

16   the PEB which we don't understand either.

17   Well, maybe you want to take this. This is

18   probably for the vendor to improve.

19   MR. WOODBRIDGE: I think we've

20   pretty much run through this section and I

21   know that you had some responses to some of

22   the issues raised earlier. What I pose to do

23   if it's okay with you, I would like to go into

24   the public section and then maybe have you

25   wrap up after that so you want to respond to

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2   it. Given the fact there are some outstanding

3   things we're going to be needing from you and

4   some other time frame issues and I know we had

5   one or two people that wanted to provide

6   comments to the committee which tentatively

7   had a due date of this Friday, so we don't

8   have to necessarily get that stuff in writing

9   today, but I would like to give the public a

10   chance to speak and particularly I would like

11   to hear from Essex county, Sussex, because you

12   heard some of the things that have just come

13   up which is relevant to real life use and so

14   Marge and Abbey, if you would like to make a

15   presentation and if you perhaps want to

16   respond.

17   MS. KLUSKA: Abbey Kluska from

18   Sussex County. One thing I want to mention

19   quickly and I just looked over the shoulder to

20   see the error message that NJIT was discussing

21   and in my experience and I have an older

22   version of the firmware, we've seen a similar

23   issue. If you put the PEB in and pull it out

24   too quickly because the PEB communication with

25   the machine it's interrupting the

2   communication and in my experience that's

3   typically what the message is. So it's not a

4   machine error, it's just you've got to give it

5   a couple seconds before you rip it out and

6   stick it back in.

7   MR. MAHONEY: I agree with that.

8   MS. McCABE: Thank you,

9   Mr. Woodbridge. Thank you committee.

10   MR. WOODBRIDGE: Thank you for

11   coming down, someone to come down who's

12   familiar with the equipment.

13   MS. McCABE: I guess we're the

14   first, well iVotronic. As I was stating

15   earlier, we are the first county in the

16   country who used DRE is county wide and since

17   day one they have been HAVA compliant even

18   before HAVA came out.

19   MR. WOODBRIDGE: How long has that

20   been.

21   MS. McCABE: 2001 and Abbey has been

22   on the job since that day since we did the

23   transition from paper to DREs. We do have one

24   of the printer booths as a demo in our office

25   and we've been playing with it and I have to

2   tell you the first day we had it it jammed and

3   it jammed badly. It took Abbey and one of my

4   other technicians two hours to unjam it and as

5   a result we had little shredded pieces of

6   ballot all over the floor. So that's a huge

7   concern of ours if the paper is going to be

8   ripped and you have shreds of it all over the

9   floor, how on earth do you have a recount and

10   if a candidate losses by one vote as does

11   happen in our little county, how do you know

12   what the true votes were in that instance, a

13   huge problem. I have to tell you that since

14   2001 Abbey has developed a testing and

15   validation criteria which was handed out to

16   you which we believe is beyond reproach and we

17   are willing to take that to any court. I

18   think that a big issue in New Jersey is that

19   there has been no testing and validation issue

20   set into place that standard and I think if

21   there was five years ago we wouldn't be

22   standing here today.

23   I also have an issue with the

24   handicap accessibility. Mr. Millstein

25   testified that the iVotronic is very

2   handicapped accessible. We can actually

3   because it's a computer a laptop, computer

4   sized machine we can literally take it out of

5   its plastic booth that it's housed in

6   currently, put it on the lap of a voter, give

7   them a security screen and they can vote

8   unassisted. And also in compliance with HAVA

9   people who are visually impaired can also vote

10   unassisted. We feel that the inability to

11   move, take it out of the booth because it is

12   attached would really be a detriment to our

13   voters particularly our handicapped voters and

14   the ability for someone to see how they voted

15   would be a detriment as well. We believe

16   legislation and adjudication has been

17   completed without election official input and

18   without alternative methods of voters. We

19   handed you a brochure today about and all

20   three voting companies in New Jersey has said

21   its a possibility. We believe the printer

22   setback voting effects technology ten years it

23   doesn't move it forward as it should. The

24   Sussex County freeholders have passed a

25   resolution in opposition to implementation of

2   the VVPAT as has 12 of our municipalities

3   because of the additional difficulty for

4   handicapped voters the problem with the paper

5   jams, the long lines it is sure to cause

6   incorrect recounts and lack of voter privacy.

7   We believe that VVPAT is a detriment to the

8   voting process and that the money that would

9   be spent to implement such a system statewide

10   would be better spent on improving voter

11   invalidation criteria and making our polling

12   places more handicapped accessible. And I

13   would like to quote Ted Cesar who is from the

14   MIT and who in 2004 suggested that audio was a

15   viable option to voter valid verification and

16   he IS quoted in that pamphlet. He said, we

17   need to make sure the addition of the printer

18   is an improvement before legislating them as

19   an improvement. We believe they are not an

20   improvement. And if I could end with a quote

21   from Dud Schaffer from election line dot org.

22   You can build a fence around the edge of a

23   cliff or you can put a ambulance in the

24   valley. The paper trail is an ambulance in

25   the valley, certification and testing of the

216

2   machines is the fence around the cliff. Thank

3   you.

4   MR. WOODBRIDGE: May I ask you a

5   question while I got you here, Marge. One of

6   the subjects of discussion is the possibility

7   of moving to a way kind of looking at and

8   toward a stand ballot. Do you have any input

9   on that.

10   MS. McCABE: I believe that paper

11   ballots are the worse case scenario and if you

12   talk to Mayor Lynn from Warren County she had

13   paper ballots with scanners and she can tell

14   you all the nightmares associated went to an

15   Ivante. They had numerous problems. Any time

16   that you add paper to the mix I mean the nice

17   thing about the DRE that we have it will tell

18   you when you've undervoted or overvoted.

19   Paper you don't have that opportunity. If you

20   mark a ballot and then change your mind in a

21   race and remark it, that scanner cannot look

22   at voter intent. It will either mark it as

23   probably mark it as an overvote and the voter

24   doesn't get to make that choice at all. I can

25   tell you a story about paper ballots that I'm

2 reluctant to do, but when we switched over in

3 the paper ballots to the DREs and Abbey was

4 going through poll worker training, she had a

5 poll worker who approached her and said, I

6 really, I don't like these machines. And

7 Abbey said, don't worry they are very usable

8 once you get used to them you will love them.

9 He said, no, I won't. I really don't like

10 these machines. She said, what do you not

11 like about them. The gentleman said, I have

12 no control over the election, and when she

13 said what do you mean by that, he said, I

14 happen to know that there are some people in

15 my town that are not capable of voting and I

16 throw their ballots in the garbage. Now you

17 tell me you want humans back in the mix with

18 paper ballots, I don't think so.

19   MR. WOODBRIDGE: Thank you, Marge.

20 That ambulance does sound pretty useful. You

21 have been waiting a long time Flavio.

22   MR. KNOUVES: Just a couple of

23 housekeeping things before I go into some of

24 the comments and questions that I have. First

25 of all, as to the concern I raised during the

2   round of hearings in July 2007 which is that

3   this report and ES&S response were published

4   on a report about October third not really an

5   adequate amount of time consistent with due

6   process to allow people to fully evaluate

7   these lengthy reports. So, again it's just

8   unfortunate that the time frames are as narrow

9   as they were last time.

10   The other thing, the next thing I

11   wanted to mention also if you recall during

12   the last round of hearings again in July the

13   public advocates submitted a list of documents

14   a book of documents exhibits 1 through 67.

15   We're going to submit now some additional in

16   addition I should say in addition to relying

17   on exhibit 1 through 67 from the last round of

18   hearings, I'm going to hand up a book exhibit

19   68 through 79. It's got a few other things.

20   Mr. Woodbridge, during the last round of

21   hearings I had posed a question to NJIT and I

22   would again ask leave to pose that question to

23   them to find out if their answer has changed

24   at all. And the question that I asked last

25   time page 169 of July 25th transcript was

2   whether NJIT takes any position about whether

3   the criteria that they were given by the state

4   represents to a reasonable degree of

5   scientific certainty a valid means for testing

6   the voting machines and Mr. Darer answered no

7   we have no position that was within the scope

8   of our project in what we were engaged into.

9   I want to know if the answer is any different

10   today than what was asked.

11   MR. WOODBRIDGE: You're asking NJIT

12   to respond.

13   MR. KNOUVES: Yes.

14   MR. DARER: We have no opinion. The

15   answer remains the same.

16   MR. KNOUVES: Thank you.

17   Mr. Chairman, one of the things that I noted

18   in the NJIT report was an issue about the ITA

19   documentation that was provided to NJIT page

20   15 of the report indicates that NJIT did

21   receive ITA testing for DRE firm revision

22   9.1.6.4 and in footnote four of that report

23   they indicate that the source of that was ITA

24   submitted for the Attorney General. I guess

25   one of the questions I have is were there any

2   other ITA reports that were submitted to NJIT

3   other than the one that's mentioned in the

4   report.

5   MR. DARER: I'm not sure. There was

6   a lot of document of ES&S we concentrated on

7   the ones that gave us the information on

8   configuration version that we were required to

9   put in.

10   MR. KNOUVES: The machine you tested

11   if I recall correctly was version 9.2.00 and

12   that you didn't receive any ITA reports for

13   that version.

14   MR. DARER: You're asking if what's

15   in the table is correct?

16   MR. KNOUVES: Yes.

17   MR. DARER: What's in the table is

18   what we reflect what we saw.

19   MR. KNOUVES: You didn't see the ITA

20   report for 9.2.00.

21   MR. DARER: No.

22   MR. KNOUVES: Now, Mr. Woodbridge

23   one of the ongoing debates that's been

24   happening today I do want to weigh in on this

25   is the question of what is the ballot what has

2   to be verified and the sense that I got from

3   the testimony today and from my operation of

4   the machine is that obviously as you're voting

5   each selection you make is immediately

6   recorded to the real time auditaudit log.

7   Once the voting is over and you press the cast

8   vote button, a ballot summary is printed of

9   the choices you have made or what purports to

10   be the choices you have made that immediately

11   scribbles into the machine without the

12   opportunity for voter verification of the

13   ballot summary portion. Now, one of the

14   things that I was trying to understand is in

15   NJIT's report there was a discussion of

16   matching the electronic records of the

17   machines versus the paper ballots and when the

18   paper ballots were being counted were being

19   tallied was that the ballot summary or was

20   that the RTAL that was being looked at and

21   tallied.

22   MR. DARER: Flavio, who are you

23   directing that question to.

24   MR. KNOUES: I think NJIT would

25   probably be best to answer that and the

2   question is: When you counted the ballots the

3   paper ballots was it the ballot summaries or

4   is it the RTALs that they looked at.

5   MR. DARER: I assume the ballot

6   summary or the line by line printing.

7   Correct, it was the ballot summary.

8   MR. KNOUVES: So you have no

9   information about whether the ballot summary

10   matches the line by line entries on the RTAL

11   because that's not something you looked at.

12   MR. DARER: Yes, we did. We

13   compared the line by line selections

14   deselections changes to the summary in the

15   single test not in the volume test, but the

16   single test.

17   MR. KNOUVES: The single test.

18   MR. DARER: I don't know what your

19   question is.

20   MR. KNOUVES: The single question

21   involves how many ballots.

22   MR. DARER: We did 130 votes, 130

23   ballots.

24   MR. KNOUVES: In those 130 ballots

25   you found a match between the line by line.

2   MR. DARER: There were no errors.

3   MR. KNOUVES: There were errors.

4   MR. DARER: They were consistent.

5   No errors.

6   MR. KNOUVES: They were consistent.

7   Again this gets back to the debate that I

8   think we were having before notwithstanding

9   that there was a match of 130 of the different

10   ballots that were cast in NJIT's test I'm

11   trying to conceive in my mind of what is a

12   VVPAT. The thing that I think about when I

13   conceive of a VVPAT, I conceive of something

14   that the voter has verified being the same

15   thing that is used in the audit and when you

16   look at the criteria, when you look at the

17   definitions when you look at the statute of

18   what is by definition what is a voter verified

19   paper auditaudit trail what is being audited

20   here in the ballot summaries isn't the same

21   thing the voter verified. The voter did not

22   verify the summary that's what's being used

23   for the summary. The voter verified the RTAL

24   logs and that isn't necessarily being used as

25   part of the audit. So, I'm not even sure the

2   system before you today is a VVPAT by

3   definition of what that is and the way this is

4   used.

5   So, another question that I had also

6   I'll allow whoever wants to answer this. We

7   talked a little bit about multi link and

8   functionality before, obviously in Sussex

9   County at least as far as section 203 of the

10   voting rights act there is no requirement for

11   multi link functionality how exactly would

12   multi link functionality work on these

13   machines.

14   MR. WOODBRIDGE: I think the vendors

15   could answer that. How do you handle the

16   multi functionality.

17   MR. PEARSON: The way the system

18   works is it could support multiple languages

19   and the system is coded so the initial screens

20   that come up are bilingual to support

21   whichever languages are required. At that

22   point in the audio there's audio files that

23   are all communicated to say for instance it

24   might be english, spanish and creole for

25   instance it would give that initial those

2   initial instructions would all be given in all

3   three languages and then the voter would have

4   the opportunity to select which language they

5   want to see the race as presented as well as

6   which audio files they would hear at the

7   voting session.

8   MR. KNOUVES: Just so I understand

9   there would be an option presented at the

10   voting session when you would choose what

11   language you wanted and the ballot would then

12   appear in that language. Now, on the printer,

13   would it, would the title of the office be the

14   same as the screen language.

15   MR. PEARSON: I'm going to go ask

16   Will if he knows the answer to that question.

17   MR. KNOUVES: The printer they

18   select an alternative language raises in the

19   alternative language or is that preprinted.

20   MR. WESLEY: Those are printed in

21   other languages. I have not had any

22   experience using it anything other than

23   english so I can't answer that.

24   MR. PEARSON: I don't know the

25   answer. We would have to get the answer for

2 you. We don't have any requirement for

3 multiple language.

4   MR. WOODBRIDGE: I see we did go

5 through that in one of the sessions. I think

6 it was section C. It says any language, so it

7 shall produce in all such languages. I guess

8 based on assumption you're going to have a

9 ballot in creole, I assume you probably want

10 creole to identify the office so the

11 information on the paper record not needed by

12 the voter's personal verification shall be in

13 english which I think suggests that if you

14 need another language conveyed it's got to be

15 in that language.

16   MR. KNOUVES: No doubt. I have no

17 doubt about that at all. The question in my

18 mind is whether the printed ballots that are

19 produced end up producing the titles of the

20 office and that other information in both

21 english and such other language or in that

22 other language alone and the reason for this

23 is a question of privacy because if you have a

24 voter who chooses that alternate language that

25 also identifies their ballot in that case.

2   MR. WOODBRIDGE: You raised that

3 last time.

4   MR. KNOUVES: I did. So that's just

5 what I wanted to ask.

6   MR. PEARSON: Let us look into it

7 for you just point of clarification not only

8 the audio ballot but the visual ballot is

9 presented in the language that the voter

10 chooses. That's not critical for some of the

11 offices although the offices are pronouncing

12 quite a few issues that have to be alternate

13 it's not the audio, but the visual ballot the

14 voter selection in their language but we have

15 to check what the are the actual print out.

16   MR. KNOUVES: Very briefly. Now

17 I'll give you sort of a shortened comment. I

18 made a comment last time although I certainly

19 rely on what I said last time which is that

20 the question before this committee again is

21 whether the ES&S has shown that the electronic

22 meets the criteria of NJSA 19:41(a) is it

23 reliable, is it accurate, has it been

24 thoroughly tested and is the VVPAT and I

25 touched on this a little bit before. I just

2   have some doubt in my mind knowing that what

3   the voter verifies isn't necessarily what's

4   being audited. I don't know that this is a

5   VVPAT. But let me talk a little bit about

6   some of those other criteria. First, the

7   question of thorough testing in the exhibit

8   book that I've handed up before, there's three

9   expert reports that we've submitted to the

10   Attorney General not to this committee because

11   of this committee's deadlines but submitted to

12   the Attorney General for review of the other

13   three machines it's from professor Wayne from

14   Princeton Mr. Hallerman, Mr. Crew and

15   Mr. Schavaslovic. These reports are all

16   therein and these reports explain why the

17   amount of testing that's been done on these

18   machines did not include an examination of

19   source code, did not include a sufficient

20   number of test ballots to determine whether

21   these printers are going to jam in the setting

22   to determine whether the software code is

23   robust enough and those three reports that are

24   in that exhibit book we submitted explain

25   these concepts, so I urge you to take a look

2   at them. That goes to the question of are

3   these machines thoroughly tested and again we

4   would suggest the answer to that is no. The

5   question on whether the machines are private

6   we explained this last time, we stand by the

7   position we took then which is basically that

8   any continuous spool system when used in

9   combination of the New Jersey practices of

10   voting authorities steps and the presence of

11   challenges is inherently compromising the

12   privacy. It's highlight again why that is.

13   You go into the polls in New Jersey, sign in

14   in the log, you sign in a voting authority

15   slip voting authority slip is then put on a

16   string that exists for each of the machines

17   the voters may go to. So there are records

18   permanent paper records in the order which

19   people voted under state law even if there

20   weren't state records there's challengers,

21   nothing in the law that prohibits them from

22   recording the order in which other people

23   voted and when you combine that with a

24   continuous spool system that will compromise

25   their privacy I'm really gratified to hear

2   that the eight time stamps are coming off

3   because that to me was just that was another

4   example of an issue of privacy.

5   As far as what was discussed before

6   about the screens I think that the idea of

7   turning the machine around to face the wall as

8   a matter of local practice makes a lot of

9   sense and is going to solve a lot of the

10   privacy problems. The privacy problems exist

11   because the continuous spool and I don't mean

12   to deny those exists, but as far as the

13   ability to peer over for someone to catch a

14   glance of what's going on.

15   One other thing I urge you to

16   consider is whether certification machines

17   should be contingent on local practices that

18   turn the machine around to face the wall. I

19   think you have to look at everything including

20   how the panels are set up and that's something

21   that makes a lot of sense. We talked a little

22   bit about the reliability of the machines and

23   really reliability and accuracy are kind of go

24   hand and glove here. There was evidence based

25   on NJIT's test we didn't cast a lot of ballots

2 they cast 298 ballots, 302 ballots in the 14

3 hour test and there were three paper jams. It

4 resulted in the lack of complete printing of

5 four ballots that's one in 100 is the jam rate

6 for this printer. You think about how many

7 jams would result in the real world election.

8 Miss McCabe testified about a jam that

9 occurred and taking two hours to solve this.

10 The question is, are these printers reliable

11 in the sense that the statute of 1948 dash one

12 requires that these machines be reliable. Are

13 these reliable when you have ballots one in

14 100 failing in a 14 hour test. Even when you

15 go the 1200 vote test, I think there was

16 testimony there were two jams there was page

17 19 of the report paper jam resulted in lack of

18 printing of barcode for three paper jams, so

19 it was incomplete but there was another jam

20 and it's I understand and I accept the jams

21 will happen in the real world but one in 100

22 or at one in 600 based on the 1200 volume

23 test. That's just an awfully high I think for

24 anyone to comfortably say that these machines

25 are reliable and this gets into accuracy

2   because the result of these jams was that

3   there was a discrepancy between the paper

4   ballots and the electronic records. It is

5   true the barcodes match the paper and the

6   tally matched the electronic ballot images,

7   but as between the paper side and the

8   electronic side there was a discrepancy and in

9   this election in this mock election I don't

10   think there was enough discrepancies to change

11   the outcome of the election, but what happens

12   when it is one vote, what happens when it is

13   two votes and there are four ballots lost or

14   three ballots lost as happened in the lab this

15   isn't real world, this is in a lab. So, one

16   of the things we've always asked this

17   committee to look at is that thorough testing

18   of voting machines and the setting of rigorous

19   standards is what can make the difference

20   between a fair election and unfair one and

21   when you look at the criteria that the state

22   has promulgated and I am talking about both

23   the statute and the non regulatory criteria

24   guidelines, the document promulgated last

25   April I'm not sure what to call them, but the

2   criteria the guidelines they've been referred

3   to in a lot of different ways. So, I think

4   criteria is a good way to look at it whether

5   they satisfy both of these things I don't

6   think that right now we've got enough before

7   us to say that this is a VVPAT. I don't think

8   when have enough to say this is reliable. I

9   have serious questions about reliability and

10   accuracy and privacy. I don't know if that's

11   been made on the record that exists today. I

12   just want to confer with my co-counsel.

13   That's all I have. Thank you for

14   your time.

15   MR. WOODBRIDGE: I'm going to at the

16   risk you heard Ms. McCabe talk, do you have

17   any comments on her experience with the DRE

18   and the paper trails and stuff like that.

19   MR. KNOUVES: We believe that the

20   addition of paper trails, the addition of

21   verification makes sense because number one it

22   provides an additional level of actual

23   security, it gives voters justifiable

24   confidence not just hypothetical confidence

25   but justifiable confidence in the results.

But, because the printers are vulnerable to

failures, vulnerable to jams are vulnerable to

inexperience the people trying to load paper

in the printers it's something that's got to

be rigorously tested and it's got to have

failure rates that are very low and it's got

to be user friendly. I would say we've seen a

lot of the four hearing I've attended we've

seen a whole spectrum I think of usability in

terms of refilling paper ranking from one

machine that in essence the pollers shouldn't

even try to do with another one you stick a

ream of paper in there and this particular

machine I would say is somewhere in the middle

but what concerns me is seeing that these

dislevel of paper jams resulting in the loss

of real balance the official ballot of record

so I think it makes sense to have paper to

have paper printers. I part a little bit with

Miss McCabe on that point but they've got to

be rigorously tested printers that are going

to work in the lab and real world conditions.

I just on the record that's been presented

with the number of failures here I'm not

2   seeing it.

3   MR. WOODBRIDGE: Thank you very

4   much. Alexander, you have any comments. Any

5   other member of the public have any other

6   comments to add while we're here today.

7   MS. KLUSKA: Could I jump up. Abbey

8   Kluska. One of the things I'd like to preface

9   before we continue, I know there have been

10   some concerns about the reel-to-reel and one

11   of the things I think have been brought up

12   repeatedly is that the machines can do a lot

13   of things, but the election officials have to

14   do a lot of other things and one of the things

15   we've talked about is if the reel-to-reel were

16   to come into affect we intend to cut the

17   individual records apart so that the issues

18   that the public advocate did bring up about

19   being able to link the record to an individual

20   would be a moot point and our plan for that

21   would be very similar to the same procedures

22   that we currently use for our paper records

23   when you take the identifying information off

24   the outer envelope, we would do the same

25   steps. We would have one team of people that

2   would cut the records apart and then the

3   commissioners would count those records in the

4   case of a recount, so that would be our plan

5   in those procedures. I hope that addresses

6   some concerns at least on privacy about

7   identifying voters on the paper trail.

8   MR. WOODBRIDGE: All right.

9   MS. KLUSKA: I'm not going to rehash

10   what Marge has already said. I believe she

11   put it a little more eloquently than I can,

12   but what I would like to say Sussex County has

13   in some way set the standard. We were the

14   first people in the country to use the ES&S

15   iVotronic county wide and in that way we set

16   some standards that we thought would be a

17   bench mark and in many cases we over the years

18   improved upon them. Those standards are set

19   through the paper that I've already handed

20   out. Some of the different testing procedures

21   that we do although we try our best to make

22   sure they are public knowledge, a lot of

23   people in the general public aren't familiar

24   with them and of course we do open our offices

25   at all times, but especially at the public

2   test before each election. Every single

3   person that has come up to me and actually

4   witnessed demonstration of the voter verified

5   paper trail has often said that they had

6   concerns about the security of electronic

7   machine. When they understood what our

8   testing practices are currently, they've all

9   walked away saying that they feel confident in

10   our electronic system, confident in our

11   speaking standards but not confident in the

12   addition of the voter verified paper trail as

13   been seen and I don't mean in any way to

14   criticize ES&S paper trail in the limited

15   understanding that I've seen it's very

16   adequate, but what my criticisms are a paper

17   trail being enacted in the standard of the

18   Attorney General's office has put forth to

19   your group as well as the rest of the state.

20   MR. WOODBRIDGE: Is there any other

21   comments thank you very much. Thank you very

22   much. Before we wrap up ES&S, do you have any

23   further comments? You also indicated you

24   might have some clarification you want to put

25   it in writing or you want to respond to some

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2   of the open questions.

3   MR. PEARSON: I think quickly we

4   would like, there's about three open items we

5   would like to verify. First of all, quickly

6   on the ITA reports there are no reports 409.2

7   released yet and they won't be available until

8   the testing is completed, so we provided them

9   the last set of reports which was the 3011

10   version which included the 901 of the DRE with

11   the RTAL printer that was the last set of

12   reports that was tested under May 15th in 2006

13   so as soon as the new reports are available

14   you will receive those. That's to clarify

15   that issue. The other question regarding

16   reliability and accuracy questions, the system

17   as a system has passed and exceeded all of the

18   2002 voting system standards that were

19   established by the federal election

20   commission. So, for all the reliability tests

21   which is an accelerated test for the system

22   operating as a system where they are conducted

23   in a continuous modemode with Virginia but I

24   think anybody wants to go check and see what

25   that testing system you will see the system

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2   passed that criteria and it will be in the

3   final report.

4   Regarding the accuracy tested it

5   also passed all the data accuracy test as

6   defined by the 2002 VFSs and completed the 1.5

7   million mark accuracy test so as far as

8   accuracy and reliability we passed the test

9   for the standard.

10   MR. WOODBRIDGE: Are you talking

11   about the paper ballot.

12   MR. PEARSON: The whole system.

13   They are tested as system by the ITA and now

14   you'll have those reports shortly, so and then

15   the last topic we wanted to just clarify was

16   just the confusion and I apologize for not

17   having all the answers regarding the paper.

18   The red strike on the paper and I still don't

19   have the definitive answer neither will arise

20   how much red is on the paper, but the folks at

21   the office said there are a lot like 20 or

22   30 feet. Somewhere in that neighborhood. So

23   there's a significant amount of warning before

24   you hit the red line which is the individual

25   indicator related to the print ear the

2   iVotronic when it hits a low paper, a low

3   paper level condition there's two scenarios

4   and I'm going to let Will address them. The

5   first is a low paper level is reached during

6   the voting session and then it will talk about

7   low paper conditions reached prior to voting

8   session, so Will why don't you the first one

9   would be if you're in the middle of the voting

10   session and the printer detects a low paper

11   condition.

12   MR. WESLEY: If it detects that

13   condition which is about a quarter inch of

14   paper left on that roll which we're estimating

15   to be somewhere about 20 to 30 feet of paper

16   left on the roll, that's quite a bit and it

17   happens it trips that threshold while the

18   voter is voting it will allow that voter to

19   continue voter until the end. The next time a

20   poll worker goes there to activate a ballot,

21   that threshold being tripped would then put an

22   error message on the screen indicating to the

23   poll worker that that roll needs to be

24   changed. And the next voting session would

25   not be allowed.

2   MR. WOODBRIDGE: So what you're

3   saying something contradictory what NJIT has

4   told us. Once you do get that vote set you

5   produce an audible signal when that happens or

6   does it just simply let that voter continue

7   and then when you put the PEB in it you can't

8   vote on it; is that right.

9   MR. WESLEY: That's correct no

10   audibles are signaled. It's visual on a

11   screen.

12   MR. PEARSON: It is a visual

13   warning.

14   MR. WOODBRIDGE: The voter is voting

15   and reached that level in the machine does the

16   voter voting that knows that.

17   MR. WESLEY: No.

18   MR. WOODBRIDGE: The voter continues

19   voting the next voter can't vote.

20   MR. PEARSON: If that voter were to

21   stay there and run all 20 or 30 feet of paper

22   out when it runs out of paper it will then

23   throw the warning up for that person and they

24   would not be able to complete their voting

25   session.

2   MR. WOODBRIDGE: Time session I

3   think they have said there is a warning that

4   would prevent somebody from voting is that

5   right?

6   MR. ANSARI: There is a warning

7   signal that the paper is low but does not

8   allowed the voter to continue finishing to

9   vote that's the issue.

10   MR. WOODBRIDGE: That's the

11   disconnect what I understand that there is,

12   there is some sort of signal that goes onto

13   the machine let them continue to vote, but the

14   next voter can't vote; is that correct?

15   MR. PEARSON: The next voter can't

16   vote.

17   MR. WOODBRIDGE: I'm getting a

18   little bit of confused at this point.

19   MR. PEARSON: I agree there is

20   confusion on that.

21   MR. WOODBRIDGE: Something you

22   people have to work out. So when the voter is

23   finished, and it gives them an error message

24   saying it is low and it will not let them

25   vote.

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2   MR. PEARSON: That's my

3   understanding.

4   MR. WOODBRIDGE: The record shows

5   two different ends here. West, one more thing

6   I wanted to clarify. I think Steve talked

7   about the rooster tail lab. I asked him how

8   long did the rooster tail go.

9   MR. WESLEY: I'm not sure.

10   THE COURT: It's the red thing when

11   you see it.

12   MR. WESLEY: It is a visual queue.

13   MR. FLEMMING: I did have one

14   question. You said you had the version 92

15   that's in testing right now and when that

16   comes out we're going to get the reports. Is

17   that machine going to go to NJIT when it gets

18   done.

19   MR. PEARSON: That has not been

20   determined. In the discussions I've had with

21   the Attorney General's Office they understood

22   we were so close to certification with the

23   significant enhancements they did not want to

24   evaluate the old system because we were

25   planning to bring the new system in for

2   certification in December, so she said there

3   might be some retesting that might be

4   required. That hasn't been determined at this

5   point.

6   MR. FLEMMING: What we have here.

7   MR. PEARSON: The latest.

8   MR. FLEMMING: What's demonstrated

9   is the 92.

10   MR. PEARSON: It is the 92.

11   MR. FLEMMING: That's not what the

12   NJIT.

13   MR. PEARSON: That was what was

14   NJIT. They tested the 92.

15   MR. WOODBRIDGE: Any other comments.

16   MR. PEARSON: No.

17   MR. WESLEY: I would like to clarify

18   this while he is here. I stepped out to talk

19   to our developers again about the error

20   message we saw, they did confirm that what

21   NJIT said is correct it simply means that the

22   right operation between the PEB the

23   communication between the PEB was interrupted

24   prematurely and that's a pretty elaborate

25   message but that's exactly what it means.

2   MR. WOODBRIDGE: It means you pulled

3   it out too fast.

4   MR. ANSARI: Can I respond to that.

5   Kevin did send us the email about that and we

6   did make sure very slowly not to pull out so

7   quick. Kevin sent a solution but it doesn't

8   solve the problem. I'm not, we are not going

9   to haggle what's wrong. The problem is for

10   you to solve it. I just told you this is

11   something happening.

12   MR. PEARSON: We can speculate until

13   we can try to recreate all the facts that's

14   all that is.

15   MR. KNOUVES: I'm sorry I just

16   wanted to get a clarification on what's before

17   the ITA. What is before the ITA versus what

18   is before what was before NJIT.

19   MR. PEARSON: The system is in test

20   with the VSTL.

21   MR. KNOUVES: Very good.

22   MR. PEARSON: It was what was

23   submitted it was off was when they completed

24   the bills so the system that had the

25   functional testing would have some minor

2   perhaps some minor changes to it from what was

3   delivered it may be during functional testing

4   it may be covered we would have made that to

5   start the testing over again so it could be

6   slightly revised.

7   MR. KNOUVES: One of the revisions

8   you're taking off.

9   MR. PEARSON: That is one of the

10   things that we learned in this we said let's

11   take it out because other states asked that we

12   have it in we said let's just take it out.

13   Yes, that is one of the changes.

14   MR. WOODBRIDGE: Any other comments

15   from the committee, no. NJIT, I would like to

16   thank you gentlemen. As usual, you've been

17   great and very, very helpful. I appreciate

18   what you've done for us. And I appreciate the

19   audience and especially those from Sussex

20   County. I assume the vendors are not going to

21   Paris after this. And as usual, Donna and

22   Karen and everybody else, thank you for

23   setting this up and Kim thank you for keeping

24   the record in back of us. Sound person, thank

25   you very much. Again we'll be doing a report.

2   We'll be waiting for you to provide the

3   additional documentation and anything else you

4   want. Anybody else has comments, please get

5   them to the Attorney General's Office. I

6   can't tell you when the report's going to come

7   out because we've got to do a draft and

8   circulate it. Thank you very much. I

9   appreciate you coming here and have a safe

10   trip back.

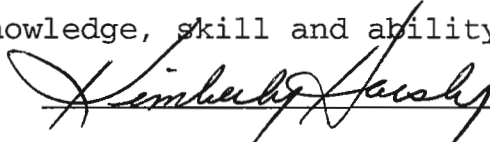11   (Whereupon the Hearing was

12   concluded.)

13   (Time noted 4:51 p.m.)

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C E R T I F I C A T I O N

I, KIMBERLY HORSLEY, a Certified Shorthand Reporter
and Notary Public in and for the State of New Jersey, do
hereby certify that the foregoing transcript of the hearing,
taken on Wednesday, October 10, 2007 is true and accurate to
the best of my knowledge, skill and ability.

Kimberly Horsley, CSR

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