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# MEETING TO DISCUSS THE STATUS OF THE INVESTIGATION INTO THE FL–13 CONGRESSIONAL DISTRICT ELECTION

## MEETING

BEFORE THE

## COMMITTEE ON HOUSE ADMINISTRATION

TASK FORCE FOR THE CONTESTED ELECTION IN THE 13TH CONGRESSIONAL DISTRICT OF FLORIDA

## HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

MEETING HELD IN WASHINGTON, DC, AUGUST 3, 2007

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# STATUS OF THE INVESTIGATION INTO THE FL–13 CONGRESSIONAL DISTRICT CONTESTED ELECTION

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**FRIDAY, AUGUST 3, 2007**

HOUSE OF REPRESENTATIVES,
ELECTION TASK FORCE,
COMMITTEE ON HOUSE ADMINISTRATION,
*Washington, DC.*

The task force met, pursuant to call, at 10:00 a.m., in Room 1310, Longworth House Office Building, Hon. Charles A. Gonzalez (chairman of the task force) presiding.

Present: Representatives Gonzalez, Lofgren, Ehlers, and McCarthy.

Staff Present: Liz Birnbaum, Staff Director; Thomas Hicks, Senior Election Counsel; Charles Howell, Chief Counsel; Janelle Hu, Election Counsel; Jennifer Daehn, Election Counsel; Matt Pinkus, Professional Staff/Parliamentarian; Kyle Anderson, Press Director; Kristin McCowan, Chief Legislative Clerk; Daniel Favarulo, Staff Assistant, Elections; Fred Hay, Minority General Counsel; Gineen Beach, Minority Election Counsel; and Bryan T. Dorsey, Minority Professional Staff Member.

Mr. GONZALEZ. I call the meeting of the task force to order. I thought I would briefly go over a chronology to give us a proper background as to where we are today in order to receive this report from the representatives from GAO. On the 23rd of March, 2007 the late and wonderful Chairwoman Millender-McDonald, established the three-member ad hoc election panel, two members of the majority and one member of the minority, to oversee matters relating to Florida's 13th congressional district election contest and recommend final disposition to the committee of that contest.

I was appointed, as well as Representative Zoe Lofgren, to be the majority members, with myself serving as the Chair. On the 16th of April, Ranking Member Ehlers recommended Representative Kevin McCarthy as the minority member. On the 17th of April counsel to the parties informally briefed the panel on the status of Florida election contest proceedings. Also present at that briefing was Congressman Dan Lungren from the minority. On the 2nd of May 2007 there was a public task force meeting to initiate an investigation of Florida's 13th congressional district election, and we authorized myself to secure the assistance of the Government Accountability Office, which was requested to design and propose testing protocols to determine the reliability of the equipment used

in the Florida 13 election taking into account recommendations by the contestant and contestee.

On the 7th of June, there was an internal briefing and planning meeting of the task force and GAO to discuss GAO working plans. On the 14th of June, there was a public task force meeting to approve the GAO work plan. On the 27th of July there was an internal briefing and planning meeting of the task force members and staff with GAO to work on the plan and ascertain its progress. Today, the 3rd of August is our follow-up meeting, our public meeting, to ascertain the status of the work being conducted by the GAO. The purpose of today's meeting from the Chair's perspective, of course, is basically a status report from GAO, any determinations that can be made at this time, what remains to be done, and also to establish a process for the task force to operate during the August recess.

Anticipating that the work has not been completed by GAO they will require more time and there may be requirements or needs that will arise during the August recess during which obviously members must somehow establish a process where we can come together, even if it is by teleconference, in order to make some determinations and pass on those requests. Appearing before the task force today will be Naba Barkakati, senior level technologist; Gloria Jarmon, managing director, congressional relations; and Jan Montgomery, assistant general counsel.

I believe that we will have a statement that is going to be read by Mr. Barkakati, but at this time, I would yield to the other members of the task force if they wish to make any opening remarks. And I would recognize the minority member, Mr. McCarthy.

Mr. MCCARTHY. Well, I appreciate the chairman for recognizing me. I am excited about moving forward as we are. I appreciate the update you had given us last week. I will tell you from that update that I was very pleased to hear the relationship and the working relationship with everybody down in Florida from Sarasota to the State. It seems like they had open arms. Everybody wants to get to a conclusion here. And so I look forward to today's hearing and I yield back the balance of my time.

Mr. GONZALEZ. Thank you very much. And the Chair will recognize Ms. Lofgren.

Ms. LOFGREN. I would just like to get to the report so I will yield back to the chairman.

## STATEMENTS OF NABA BARKAKATI, SENIOR LEVEL TECHNOLOGIST; GLORIA JARMON, MANAGING DIRECTOR, CONGRESSIONAL RELATIONS; AND JAN MONTGOMERY, ASSISTANT GENERAL COUNSEL

Mr. GONZALEZ. All right. At this time, the Chair will recognize Dr. Naba Barkakati.

### STATEMENT OF NABA BARKAKATI

Mr. BARKAKATI. Chairman Gonzalez, Mr. McCarthy, Ms. Lofgren, I am here today to update you on our progress regarding the Florida 13 voting system review. I want to begin by thanking the task

force for its continued support of our efforts, and I also acknowledge the cooperation of everyone else involved in helping us get the document and information that we have needed to conduct the work so far. We have accomplished a lot in the past few weeks from the time when we agreed on the engagement plan on June 14, but we still have some work to complete before we can formally conclude any conclusions. To conduct our work, we have visited Sarasota County, Tallahassee, had discussions with Florida's Secretary of State, Division of Elections, and then we had talked to Sarasota County Supervisor of Elections, ES&S, the manufacturer of the system, and the team leader of the Florida system in Florida State University's source code review team, the one who looked at the iVotronic source code.

By analyzing the detailed ballot data that we have received from Sarasota County we have verified that 1,499 iVotronic machines had recorded 119,919 ballots in the 2006 general election, and of these there were 17,846 undervotes in the Florida 13 race, which corresponded to a 14.88 percent undervote rate on the iVotronic machines. We examined the undervote by machine, precinct and ballot style, looking for any patterns. We have not yet noticed any apparent patterns, but are continuing with our analysis.

While we have not completed reviewing all the testing that is done so far, there are some observations we can make at this time. Of the many different types of testing that one can perform in a voting system, we have focused our efforts on two types of tests that are called ballot testing and load testing. Ballot testing refers to the functional testing of the voting system focusing on the different ways in which the voter may make selections on the ballot and then cast a ballot with the iVotronic machine.

Load testing subjects the voting machine to a large number of votes in order to verify that the system can properly handle the expected volume of ballots. Considering all the different ways that the iVotronic machine enables a voter to make selections and cast a ballot, we counted 112 different ways that the voter could make such selections, by navigating through the pages and casting the ballot in the Florida 13 race, assuming that is the only race on the ballot. We found that the Florida certification tests, the Sarasota County's logic and accuracy tests, and the parallel testing that was done under the state audit of the Sarasota County election covered 13 of the 112 ways of the ones we enumerated. We have not yet assessed whether this is significant.

Load testing was done as part of Florida's certification testing, but the ballots were machine generated using a testing feature built into the iVotronic machine, which means that users did not touch the screen to make selections and cast ballots. Again, we have not fully assessed whether this is significant.

Last week we obtained access to the iVotronic source code under a nondisclosure agreement, and then were able to review the source code ourselves and verify some of the items that are reported in the Florida State University's review of the source code that was also done under Florida's audit of Sarasota County's elections. We plan to discuss the source code further with the audit team, as well as ES&S in the near future.

One item to note from the code review report is that the review team did not convert the human readable source code into machine code, which we call object code, and compare the resulting object code to the certified version of firmware for the iVotronic machines that were used in Sarasota County. These steps would be necessary to assure that the reviewed source code corresponds to the firmware in the iVotronics. As part of our review of the State audit, we also examined the selection of sample machines for the parallel testing and the firmware verification. Ten machines were used for parallel testing, and the State audit had examined the firmware from six randomly selected machines. Our preliminary analysis indicates that these sample sizes were too small to apply the results across the board to all iVotronic machines that were used in the 2006 general election in Sarasota County. For example, checking the firmware in six randomly selected machines is inadequate to conclude that the firmware was not compromised on any of the machines that were used in Sarasota County. I want to stress that these are just our preliminary observations. It is not clear to us yet whether these are items we think will need to be tested. For any further testing that we identify we plan to determine the relevance and the significance of the test, the test procedures, and estimate the resources needed and the time required to conduct the test.

Besides analyzing potential tests, we are planning to examine the testing conducted by ES&S and identify other tests besides ballot testing and load testing that I had mentioned earlier that could be used to determine whether the voting system contributed to the undervote.

Mr. Chairman, this concludes a summary of my written statement. I would be happy to respond to further questions that you and other members of the task force may have at this time. Thank you.

Mr. GONZALEZ. Thank you very much, Doctor.

[The statement of Mr. Barkakati follows:]

United States Government Accountability Office

GAO

Statement
Before the Task Force on Florida-13, Committee on House Administration, House of Representatives

For Release on Delivery
Expected at 10:00 a.m. EDT
Friday, August 3, 2007

# ELECTIONS

# Status of GAO's Review of Voting Equipment Used in Florida's 13th Congressional District

Statement of Dr. Nabajyoti Barkakati
Senior-Level Technologist
Center for Technology and Engineering
Applied Research and Methods

GAO-07-1167T

Chairman Gonzalez, Ms. Lofgren, Mr. McCarthy,

I am pleased to appear before the Task Force today to update you on the progress of our review of voting equipment used in Florida's 13th Congressional District, which we are conducting in response to your request of May 25, 2007. I want to thank the Task Force for its continued support of our efforts. We have accomplished a lot in the past few weeks, but we still have several work items to complete before we can formally draw any conclusions.

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District.[1] Following the contesting of the election results in the House of Representatives, the Task Force met and unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. On June 14, 2007, we met with the Task Force and agreed upon an engagement plan, which included the following review objectives: (1) What voting systems and equipment were used in Sarasota County and what processes governed their use? (2) What was the scope of the undervote in Sarasota County in the general election? (3) To what extent were tests conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests? and (4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

To conduct our work, we visited Sarasota County twice, most recently 2 weeks ago, and we were in Tallahassee last week to meet with the Secretary of State and the Division of Elections. While in Tallahassee, we were able to execute a nondisclosure agreement that permitted us access to items that the State of Florida and the manufacturer of the voting system, Election Systems and Software (ES&S), considered proprietary, including the proprietary appendixes of the Florida State University source code review report; the technical data package, which includes items such as the software specification; and the source code for the firmware installed in the iVotronic touchscreen voting systems used in Sarasota County. We are currently working on a separate nondisclosure agreement to access technical and testing information from ES&S directly.

[1] Undervotes are votes for fewer choices than permitted. In this case, it means ballots that did not record a selection for either candidate in the congressional contest.

In our meetings with Sarasota County, we learned the entire process of configuring the election, running the election, and tallying the results, and about the testing the county conducts on the voting systems, such as the logic and accuracy testing. In our meetings with the Division of Elections, we discussed the conduct of certification testing, in particular, the testing conducted on the ES&S system used in Sarasota County, and the conduct of the state audit—how decisions were made to conduct the audit and the processes used to conduct the audit. In addition, we have received and are reviewing and analyzing data and documentation received from both sources, as well as the submissions from the contestant and the contestee provided by the Task Force.

## Summary

We have identified the voting systems and equipment used in Sarasota County and verified that the systems were approved for use by the Florida Division of Elections. We know that nine different ballot styles were used on the iVotronic touchscreen voting systems and have an understanding of how the ballots were configured and loaded onto the machines. Further, it was also explained to us how votes are tallied and certified, including the conduct of the machine and manual recounts.

We have been analyzing the detailed ballot results from the election as well as the incident and technician logs from Sarasota County to identify patterns in the undervote. Specifically, we have examined the undervote by machine, precinct, and ballot style. Patterns in the undervote could provide us insight on specific conditions that could have caused the undervote. However, we have not yet noticed any apparent patterns, but we are continuing our analysis. From our analysis, we have been able to verify that 1,499 iVotronic voting systems recorded votes in the 2006 general election and the vote counts for the contestant, contestee, and undervotes match the vote totals for election day, early voting, and provisional ballots in the Florida-13 race. A total of 17,846 undervotes were recorded in the Florida-13 race out of the 119,919 ballots cast using the iVotronic voting systems—corresponding to a 14.88 percent undervote rate.[2]

[2]Because the absentee ballots were not cast using iVotronic voting systems, we did not verify the absentee ballot counts. When absentee ballots are included, a total of 142,532 ballots were cast and a total of 18,412 undervotes were recorded.

While we have not yet completed our review of all of the testing efforts to determine whether they provide reasonable assurance that the machines properly reflect in their totals the selections made when the ballot is cast, there are some preliminary observations we can make.

A variety of testing is needed to obtain reasonable assurance that this objective is accomplished, including ballot testing, load testing, and environmental testing.[3] As agreed with you, our efforts will review the testing that has already been completed, including tests conducted by the State of Florida (certification testing), Sarasota County (logic and accuracy testing), and the equipment manufacturer. We are also reviewing the tests conducted as a part of the state audit, including parallel testing, the examination of Sarasota County's election practices, and the Florida State University source code review. Once we complete our review of the testing efforts, we will identify the potential benefits associated with conducting any additional tests—how they will help us understand whether the system contributed to the undervote issue—and the resources needed to conduct such tests.

So far, we have focused our efforts on two types of tests—ballot testing and load testing. With between 28 and 40 contests on the Sarasota County ballots in the 2006 general election, the number of possible voting combinations is over 100 trillion. Accordingly, it is unrealistic to expect that all possible vote combinations can be tested.

[3]For the purposes of this review, ballot testing is a subset of the functional testing that focuses on the vote selection and casting functions. This includes testing the different ways in which a voter may make selections on a ballot and then cast a ballot with the iVotronic electronic voter interface. For example, the Florida Voting Systems Standards require the system to allow the user (1) to make a selection for each contest, and (2) to review the selections made and make any changes prior to the vote being cast.

Load testing, for the purposes of this review, is the testing performed to provide reasonable assurance that the voting system can properly handle the expected volume of voters and ballots that are expected. Florida certification tests include a test to verify that a precinct count system, such as the iVotronic, can process at least 9,900 ballots.

According to the Florida Voting System Standards, environmental tests are intended to simulate exposure to shock and vibration associated with handling and transportation and to temperature conditions. For example, voting systems in Florida are to be able to operate in temperature conditions ranging between 40 and 100 degrees Fahrenheit.

We have also examined how the system allowed voters different ways to make a selection in the Florida-13 race and recognized that these represented different ways that the voters could indicate their intent in the race. By taking into account these variations, our analysis has found at least 112 different ways a voter could make his or her selection and cast the ballot in the Florida-13 race, assuming that it was the only race on the ballot. Specifically, a voter could (1) initially select either candidate or neither candidate (i.e. undervote), (2) change the vote on the initial screen, and (3) use a combination of features to change or verify his or her selection by using the page back and review screen options. We found that the Florida certification tests and the Sarasota County logic and accuracy tests verified 3 ways to select a candidate; and the Florida parallel tests verified 10 ways to select a candidate—meaning that of the 112 ways, 13 have been tested. We have not yet assessed whether this is significant.

A test to determine whether a system can handle the expected volume of activity is commonly referred to as load testing. We found that ballots used for load testing during the certification testing were machine-generated using a testing program built into the iVotronic system, i.e., users do not touch the screen to make a selection and cast a ballot. Neither the Florida audit nor Sarasota County's logic and accuracy testing performed load testing. We have not yet assessed whether this is significant.

We have also been reviewing the Florida State University source code review. As we mentioned, we obtained access to the source code last week and we were able to verify for ourselves some of the items discussed in its report. We have had prior discussions with the leader of the Florida State review team and will be continuing our discussions with the review team and the manufacturer to ensure our understanding of both the findings of their review and the operations of the iVotronic system. One of the items noted in the report was that the review team did not (1) convert the source code to object code, and (2) compare the resulting object code to the object code that was used to run the voting machines in Sarasota County.[4] We are still assessing the significance of this item.

[4]According to the Institute of Electrical and Electronics Engineers, source code contains computer instructions and data definitions expressed in a form suitable for input to an assembler, compiler, or other translator that generates the object code. Object code contains the computer instructions and data definitions expressed in a form that can be recognized by the processing unit of a computer.

As a part of our review of the state audit, we examined the selection of samples for the parallel testing and the review of the Sarasota County election practices. Our preliminary analysis has found that these sample sizes are too small to support generalization of the results to the overall population. For example, the generalization of the results from the use of 10 machines for parallel testing cannot be supported because the sample drawn was not random and the sample size was too small. Similarly, we have little assurance that the examination of 6 machines' firmware is adequate to conclude that the firmware was not compromised on any of the machines. Our discussions with Florida officials indicate that such limitations resulted from court-imposed restrictions on machine access and resource considerations of performing the testing.

It is important to bear in mind that these are just our preliminary observations. It is not clear to us yet whether these are items we think will need to be tested; but they are items we have noticed while we are reviewing the previously completed test activities. As we previously discussed, for any testing issues we identify, we plan to determine how relevant and significant the issue is and the resources needed to conduct such tests. Our identification of resources will include test personnel and equipment, the voting systems and equipment to be tested, and the time required to conduct such tests. For example, as we have discussed, one of the issues we identified in the source code review is that the source code was not converted to object code and compared to ensure that it represented the code used in Sarasota County. Further, our preliminary analysis has shown that we do not have reasonable assurance that the firmware was not compromised on any of the iVotronic systems used during the election. In order to determine whether these issues warrant further testing, we still need to determine the potential significance of these issues, as well as identify the test personnel and equipment, the voting systems and equipment to be tested, and the time required to conduct such tests. To identify these resources, it will also be important to determine how such tests should be structured and executed.

Besides conducting such resource analyses, we still have several activities to complete with regard to testing. First, we have not yet evaluated the testing conducted by the system manufacturer, and second, we are still in the process of identifying other appropriate tests that could be used to determine whether the voting systems caused the undervote (for example, the effects of provisional ballots and environmental conditions).

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions you or the other members of the Task Force may have at this time.

For further information about this testimony, please contact Keith Rhodes, Chief Technologist, at (202) 512-6412 or rhodesk@gao.gov, or Naba Barkakati at (202) 512-4499 or barkakatin@gao.gov.

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Mr. GONZALEZ. Do either of the other representatives from GAO wish to address the task force? Ms. Jarmon.

Ms. JARMON. No.

Mr. GONZALEZ. And Ms. Montgomery.

Ms. MONTGOMERY. No.

Mr. GONZALEZ. Very good. I think I will start off with a couple of questions. And we have the luxury right now, I believe that the House is still in recess, so we are going to try to accomplish as much as possible. I do have some questions. Some of it is so technical, Doctor, I think at your briefing last week we tried to get into it. At the end of the discussion, I still have such a layman's understanding of what you really do in many different ways, but I want to start off with ballot testing.

One concern that you have, and I want to preface everything that we go into today that you have not made a determination whether this is significant or insignificant. But let us start off with some of the areas of concern. Ballot testing, since only 13 of 112 different ways the voter could have made a selection in the Florida 13 race specifically is an area of concern, and I want to know why would it be a concern.

Mr. BARKAKATI. I should probably say that we are trying to stay away from saying it is a concern. Mainly because it is just an enumeration of tests that you do. And in the end, we may decide or we may conclude from our deliberations that it really doesn't mean much and the functionality of the machine tested fine by doing the cases that were done. So in other words, the other possibility also remains that even though we have enumerated 112, and in reality it could make combinations that can grow even farther by considering other steps, so we may say that, well, that is extraneous and doesn't require to be done. So that is why we haven't said that it is a concern. And also we have kept in mind that between 13 and 112, all we are saying is different ways of selecting in a two-way situation in the ballot, and it probably won't be too time-consuming to do, even if we were to raise it as an item.

Mr. GONZALEZ. I appreciate what you are saying. And the description that it is a concern is the Chair's description. And we could say it has—somehow it has drawn your attention. I don't know how else to say it. For a layman, if you say you have 112 variations of something, you think, well, you better test as many of those as you can. But that is not necessarily true when you get into the technical sense, and we will just wait for your expertise to be applied. Load testing, one thing that you indicated is that on the load testing, during the certification testing that it was machine generated, which means users do not touch the screen to make a selection.

Neither the Florida audit nor Sarasota County's logic and accuracy testing performed load testing. We have not yet assessed whether this is significant. So again, this is something that has drawn your attention as to how you test, whether there is the human element, the actual touching and so on.

Mr. BARKAKATI. Yes. The machine has a built in feature. It can say test for us, you know, casting 9,000 ballots. And it will do it for you by almost exercising as much of the software as it can, but excluding the part where you have touched the screen. So we were

raising it as an issue that to truly test a machine for its ability to handle, you know, including the human element of entering the vote, it wasn't there. Basically, that is what the observation is. And it may turn out that it might be good to do so or maybe it is not, again, not a matter that needs to be pursued further.

Mr. GONZALEZ. The other item that you, and we are reading from your draft of course, is that one of the items noted in the report was that the review team did not, one, convert the source code to object code; and, two, compare the resulting object code to the object code that was used to run the voting machines in Sarasota County. Can you translate that?

Mr. BARKAKATI. Yes. Essentially the software is in a programming language. They call it C, C programming language, primarily. And you can read it. A human can read it. I mean, you will be able to read it. There will be words that are like English like words, but of course they have a special meaning in the computer sense. And so programmers should write using that language, and that is what we would be reviewing if we were reviewing source code. And those programs are going to lay out the intent of the machine, like, you know, cast the ballot, do this or that. So we will be able to read through the logic and say, oh, this looks good.

But of course, the machine doesn't run that. You would be using it though like something called Compiler or Linker or things that enable you to convert source code into binary, you know, ones and zeros that are not readable by us, but that is what the machine is going to execute. And that is the version that is going to be loaded into a chip.

You know, they call it EPROM. That is like a flash memory. Where it can stay for—even if the power is turned off, it will stay on. And that is what the iVotronic always runs. So one of the problems we have is even when I review the source code I would like to know that what I reviewed was producing exactly the same binary, which it probably does for all I know, as what is in the machines. And all we are saying is that that step was not done.

And we have talked to the team and they were saying that they were relying on other certifications of that. In other words, like independent testing already have done it. And we have not verified. I mean, it hasn't given us complete assurance that we have seen the steps performed and confirmed. Especially if you know how this is done. It is not going to be a lengthy, long-drawn process. If you had the tool, you could do it very fairly reasonably well. Within a day maybe you can complete it. So that is where we are wanting to see this done basically. And it wasn't done. But then again, if we find that the certifications that are provided by ITA, an independent testing authority, are maybe in our judgment it is okay, then perhaps it is all right. But I must say that even the code that I reviewed I was always wondering if that is—I mean, I would have liked to perform that step myself, except that you need those tools from the manufacturer. And we didn't have that available to do it immediately.

And that is the only point we are making in that they are saying it wasn't done by the team and it was taken as a given, as an assumption. So there is nothing worth faulting the team for that. But it would be a critical step to complete to really have an assurance

that, okay, the code was reviewed and it was really the same thing that drove the machine. That is the idea.

Mr. GONZALEZ. It was one of the more contentious points, and that is access to the source code. But my understanding is you have not really had any real objection gaining access. But we are working on, I believe, and Ms. Montgomery might be able to answer it, on the finalization of the confidentiality agreement, which will allow complete access and use of the source code as you have indicated you wish to do is that correct?

Mr. BARKAKATI. Yes. I would start, and Ms. Montgomery can add also, yes, we were given complete access. We were not allowed to take the source code with us, which is understandable because it is a proprietary item. But we can look at it as long as we want, as much as we want, take notes on it. We have been able to do all of that. And for further discussions and further technical information, we do have work going on on another agreement, and perhaps you can add.

Mr. MONTGOMERY. I believe we have an agreement with ES&S at this point. In theory the team will be going down very soon in the next several weeks to Nebraska to access the internal testing information from the ES&S. So I would say we have had very good cooperation and we have access to the information we need to do this job.

Mr. GONZALEZ. Excellent. Thank you. One of the last points, and one that I sort of understand and I think, again, a layperson may understand, and this is going to be on page 5 of your draft report: As a part of our review of the State audit, we examined the selection of samples for the parallel testing in the review of the Sarasota County election practices. Our preliminary analysis has found that these sample sizes are too small to support generalization of the results to the overall population. Now, to a layperson that simply means you have 1,500 machines that were used here in the election and that a certain number were actually utilized for testing and so on. And further you say: Our discussions with Florida officials indicate that such limitations resulted from court imposed restrictions on machine access and resource considerations are performed in the testing. So is it really the number of machines that were tested? How many out of the 1,500 at this point?

Mr. BARKAKATI. Well, as it mentions here, 10 machines were used for parallel testing. But if you remember what happened is that they tested five machines that were not used in the election, and five from the set that was used in the election. Now, to pick the machines that were not used in the election they only had a very few left over. They didn't have the choice to pick from a large population.

So what I am trying to say is that there was such a small set of machines that were not used in the election that they could only pick five out of that. And then, of course, that forced them to do five on the other side to keep it the same. So they were not thinking from the point of I guess generalizing using statistical methods and all to the whole population.

Now, to say one thing in a clarification is that if you want to make a statement about the whole population of machines, then you have to kind of explain how much confidence you want, you

know, say 99 percent confidence, and how much error you are willing to tolerate, meaning how many of those machines, what percentage might still not conform to your test and you are okay with that.

Say, if you want to say with 99 percent confidence out of 1,499 machines, I want to be able to say that only 5 percent at most have an error. You know, whatever the condition is; error in testing or error in not having the right version, it doesn't matter. Then the selection would be something like our statisticians say, 89 machines have to be tested.

So all we are saying is that if you wish to kind of make a conclusion that, okay, we tested the machines and they are all, say, don't have any problem, then you have to pick 89 and perform the test. And at the end all you are able to say is that with 99 percent confidence, I know that only 5 percent at the most may have an error, so 95 percent is okay, you know, of the population. And based on if things seem normal, the machines may be different levels of the confidence and different levels of error, but you have to set those things and pick a sample and then your conclusions can be essentially statistically significant and everybody can agree that, yes, they have tested thoroughly. That is the reason for raising the issue.

Mr. GONZALEZ. Thank you. And the last thing I want to point out on page 5, you said there may be some other causes, and we covered this in our briefing last week. One would be the effects of provisional ballots. And we understand provisional ballots. The other thing that you said was environmental conditions. And in last week's meeting, I didn't know what you meant by environmental, and you pointed out temperature. And that is, for instance, the machines can operate according to certain tolerances, such as temperature and such. When you say environment to a layperson, sometimes we think, you know, real life conditions. In other words, where they were placed, how long they were sitting there, the angle that people had to press their selections and such. But that is not what you mean. Environment is something entirely different?

Mr. BARKAKATI. I think either of those factors can come in the primary environment of things or more like to be able to handle shock, vibration, humidity and temperature. Those are the kind of things that come into play there. And those things are done particularly by the independent testing authority. So we may very well conclude that that part is taken care of and we don't need to worry about it. But that is what we meant in that instance.

Mr. GONZALEZ. All right. Thank you. And that concludes my very long number of questions. But I know that the other members of the task force at this time will have questions. And I do want to welcome the ranking member of the full committee, Mr. Ehlers. Good morning.

Mr. EHLERS. Thank you.

Mr. GONZALEZ. And at this time the Chair will recognize Mr. McCarthy.

Mr. MCCARTHY. Thank you, Mr. Chairman. Just a couple questions. Do you have any determination currently about how far

along you are in doing the report. I mean, are you 20 percent along. Could you put a percentage to it?

Mr. BARKAKATI. I probably couldn't put a percentage, but I should say in terms of our four objectives that we laid out, the preliminary ones like looking at of course the first part, the first two are basically figuring out what systems are used and how they are used. I would say that part is done. We have gotten all the information from everywhere to figure what machines were used, how and all that. The second, including the—we are still analyzing, though, the level of problem, like undervote pattern, et cetera, is not completely done. We have a little left there.

Looking at the previous testing was one of the things. You know, like previous testing by manufacturer, by Florida State and then Sarasota County. We have not looked at the manufacturer testing, but we will be looking at that by August 15 or so. Which means that could get done soon. And that will settle questions like whether they have maybe internally tested certain things that we haven't seen elsewhere and we could check them off. But I would say the most important thing that is remaining are the things that we say here that we have not determined the significance of, to have an internal discussion and deliberation to figure out if it is important or not, and whether we should raise them to the level of tests to be done.

And then, of course, the figuring out whether, you know, how much time is needed, how much resource, so we have some information to decide whether even to go forward; if it is cost prohibitive or resource prohibitive, then you cannot do it.

So in other words, mostly the fourth item where we say figure out what tests might be needed and come back to us with detailed information about them is the ultimate biggest thing remaining. So I am not putting a percentage, but we are devoting our time to basically checking out the testing at ES&S and doing our own internal deliberations and discussions to figure out the testing we should be, minimum or more testing that we will be proposing to you or listing to you with information that might help you decide whether you do it or not. And again with the caveat that maybe this is something to say, all checked out there is nothing much you can propose. That is a possibility.

Mr. MCCARTHY. Now, you have also studied the audit that the State did and you have spoken to some of the PhDs that did the study as well. Is that correct?

Mr. BARKAKATI. Yes. And we did say very briefly that we were able to verify certain, like things that they talk about, like the user touches the screen and this is how the vote gets cast. We could check a few sequences of code and check what they say about the code. And they, of course, match what they say.

Mr. MCCARTHY. So you have a check and balance of that?

Mr. BARKAKATI. Yes. We didn't check all the details of it, and we are going to do a little more. And as a matter of fact, they also have been very responsive and he has, the leader has offered to help us out if we need to; in other words, because they have already gone through. Although we were trying initially somewhat more to do on our own to be independent and see on our own what is there.

Mr. MCCARTHY. Now, you are so far along and you have done the analysis. Is there anything out there that makes it drive you in a different direction? Is there, for no better word, is there a smoking gun? Is there something out there that says, hey, this is the problem already?

Mr. BARKAKATI. So far, I would say no, other than the things that we raise as far as sample of the machines, you know, like are not adequate and all. Those are more along the lines of being able to say the same thing that there is no smoking gun. Sure.

Mr. MCCARTHY. You just take them away.

Mr. BARKAKATI. Right.

Mr. MCCARTHY. And one thing, and I just draw on what the chairman said, you have these 112 ways and only 13 of them had been tested. And that kind of raised a question to me last week. And when I probed further, I was wondering why the State did these 13. And it was described to me the reason you did these 13 is because the contestee, Ms. Jennings, argued that there was something wrong. These 13 are the top analysis if something went wrong and denied Ms. Jennings a vote, these 13 would show it. That is why they didn't test 112 because these others that could be left would mean if something went wrong in these other tests, it would give Mr. Buchanan more votes, and he was already in the lead, so why would we test for the sake of saving money, I guess, is that correct?

Mr. BARKAKATI. Basically, the reason for our number being higher is because we think of like, well, the voter could go forward and press the page back key and change it again or change it from the review screen. There are multiple options of doing things. When you take all the combinations it becomes larger. Now, I would agree that they were primarily making sure that Ms. Jennings could get votes, no matter how you went. And that is what the rationale was given to us. And in that scenario, there could still have been a few more to check the other side, which is like you know, maybe Mr. Buchanan could also be given votes by changing and that would raise it to, I think, 18 or something like that instead of 10.

Mr. MCCARTHY. But these were the top 13?

Mr. BARKAKATI. Yes.

Mr. MCCARTHY. And you are testing everything, so it could come back that maybe Mr. Buchanan got more votes?

Mr. BARKAKATI. I should really kind of emphasize that those tests are going to only confirm that each party is able to get votes and no problem. And the logic and accuracy test that the counties do is also geared towards making sure that every candidate on the list in any race is able to get a vote by the machine. They cast it and confirm that it happens.

Mr. MCCARTHY. Now, you say you have looked at the source code. And then when we talked last week, you have your own expertise when it comes to programming and a few others. Was there anything looking at this source code, I know you haven't been able to run it because you are getting the agreement, anything shoot at you just understanding programming and others?

Mr. BARKAKATI. No. As a matter of fact just as the other team, the Florida State University team that had looked at the source

code, their conclusion was it is a simple program that is a very sequential processing of what happens, like a user touches something it keeps on checking, and it determines what the vote is, marks it and saves it when you press the vote cast button.

So in that sense, I found the same exact thing. It was readable. It wasn't hard to read or understand. And it was simple enough to follow that logic essentially. So nothing jumped out when I looked at the source code.

Mr. MCCARTHY. So when you looked at the source code you got by looking at it the same thing that the PhDs that looked at it from the State and the court did.

Mr. BARKAKATI. Yes. Because they did point out anything that they saw in terms of like other flaws and all in a proprietary appendix which wasn't released to the public, and we could see those also. Partially we looked at some of those too. Because they pointed out certain things that are not pertinent to undervote. But we will explore that a little more. If you recall, there were three appendices that were not released to the public. And they included more information, but they were saying that is not pertinent to an undervote problem, and we have been looking at that as well.

Mr. MCCARTHY. Normally, and you may not be able to answer this, but for our scheduling I know there is a motion that is going to come forward, and we are going to a district work period for the month of August. Do you believe you may have the final report during August when we are out? Do you foresee that happening?

Mr. BARKAKATI. I really think that we would require—I mean, since it is only a month we will require this time to really do our—there is a little bit of work remaining to figure out testing done by ES&S and talk to some of the code review team again. So it looks like that most likely it don't happen that the report will be done.

Mr. MCCARTHY. The only reason why I ask is mainly for scheduling. I want to make sure we have our public meeting with them when that comes back. I am actually very pleased with how everybody is working together. And it sounds like everybody wants to get to a conclusion down there. And that is nice to know from the manufacturer down to the election officer. So I appreciate your work. I yield back, if I had any time left.

Mr. GONZALEZ. Thank you very much. The Chair will recognize Ms. Lofgren.

Ms. LOFGREN. Thank you, Mr. Chairman. I think you have asked all of the substantive questions I had. The only, I guess, remaining question I have, is there anything we could do to help you conclude this, any effort that we could make that would assist you in getting this job done efficiently and as soon as possible.

Mr. BARKAKATI. I would say that the task force was very helpful when they initially told everyone they needed everybody's cooperation. And we have not really had any problem with anyone. So it seems that we are in touch with the staff, and nothing is there right now that is holding us back, other than the mere fact of like looking through everything and deciding on our own. So it is a deliberative process a little bit. And that is kind of expected that you would have to do that. So I would say no. If I am wrong and we turn out to be needing some help, I think we know how to—

Ms. LOFGREN. You know how to get ahold of us.

Mr. BARKAKATI. Yes.

Ms. LOFGREN. That was the only question I had. I think obviously we don't know the answers yet, but we are on our way to getting whatever answers can be obtained. And that is all we hope to do in an objective, fair and expeditious manner. So I think that this is a good meeting and a good report. We all wish it were over, but it isn't yet. I don't know if Mr. Ehlers has comments. I have a motion I would like to offer at the appropriate time.

Mr. GONZALEZ. Thank you, Ms. Lofgren. The Chair recognizes the ranking member.

Mr. EHLERS. Thank you very much, Mr. Chairman. I am sorry I was late, but I skimmed through the report. There is just one point I want to raise, and it looks like you are on track and I appreciate your good work on this. I have been involved in elections since 1974, which shows how ancient I am. And I was also involved in writing HAVA. In fact, I wrote the very first part, which was the standards part. And I emphasized to NIST when we did this, and we did require this is in the requirements, and that was the human factors.

Because I had observed during my many years working with elections, the majority of errors are human errors, they are not machine errors, they are not equipment errors, they are human errors. And that we try to accommodate that in HAVA. I don't think we did it nearly as well as we should have, and certainly not as well as I wanted to. But we did do some of that. And running through your draft here and the discussion I have heard the short time I have been here, it is almost entirely about the machines; was the source code okay, was the object code okay, was the machine operating properly and so forth. I didn't hear a word about the human factors, which based on my experience I would think would have to rank higher in probability than either the machine or the source code errors.

What have you done on the human factors part? Do you have expertise in GAO or are you using experts in GAO to analyze the possible human factors in this case?

Mr. BARKAKATI. It is true that we have not addressed the human factors issue yet here. And of course, we are aware of quite a few other studies where they have looked at the human factor and kind of tried to draw attention to the fact that there are similarities in other counties of similar—layout of ballot and where they might have had undervotes, higher rates like this one. We were trying very hard to eliminate, you know, stay away from the human side because it is so—you know, we couldn't really figure out how to completely quantify that basically. But I would agree completely that there are—I mean, it is very much possible that the whole reason was human factors. And right now I should say that we are trying to—we have not addressed it since a lot—there have been a lot of people who have raised the issue.

We consider—we would probably have to consider this as we go forward and before we issue a final report as an element, whether either explicitly to say that we are unable to or we could not or did not or something else. You know, that we considered it. And maybe you can propose something that can be done in that phase too. But

we have not done much other than reading the reports that are already out there.

Mr. EHLERS. I would strongly encourage you to. Because as I said, based on my many years of experience that is the most frequent problem. It is not the least likely, it is the most likely. And I would consider the report terribly incomplete if you don't get into that as much as you are able to or if we need other experts to look at that. I myself, when I saw the ballot for the first time, I missed this slot. I went right to the ballot and I missed it. Now, I know there are safeguards, you can go back and it catches you and so forth. I am not dismissing that. But I have been around this business a long time and I totally missed that line. I am not saying that is the cause. I am just saying that has to be examined along with all the physical parameters. You do have to look at the human factors, whether you have to get outside help or not. But that could be a crucial part.

Now, if you find a lot of other errors, then you have the real problem of deciding which it might be. But if you don't find other problems, that is certainly one to look at. And I would very much appreciate a detailed study of that. Again, I don't know to what extent NIST has expertise on that either and whether they could be of any help. But it is certainly an issue.

Mr. BARKAKATI. And we probably have to—we at least can try to find out expertise wise who we might be able to consult on this. I would say that obviously we cannot probably complete looking at the human factors within the remaining time. But as a factor to be considered, that is certainly a possible way to handle it.

Mr. EHLERS. I recognize full well some of this would be almost impossible to determine. For example, one newspaper article I read speculated that the undervote was because the primary was so nasty and some people were angry and said I am not going to vote for either one. Well, there is no way you could even measure that. But I think there are a number of factors that you can determine actually by experiment with groups of people to see if they were factors or not. Thank you very much. I yield back.

Mr. GONZALEZ. Thank you very much, Mr. Ehlers. A couple of real quick points. We had already approved pretty much what the plan was going to be. And I know that GAO felt it was necessary to go into certain areas to get the background information on how the election was conducted in the preparation of the machines, the instructions and so on. To the extent that human error may come and play into it, the only thing I would caution again is that we stay with the operating plan, number 1. Number 2, not to go beyond the scope of it, because the resources, time and energy, of course, are precious to all of us.

And lastly, that the burden really does rest with the contestant in this case. And on June 22, the representatives, the attorneys for the contestant and the attorneys for the contestee provided this task force with information they felt was necessary for GAO to take into consideration. These are recommendations, suggestions, some sort of guidance. To the extent that you believe they are relevant, to the extent that you would believe they needed to be addressed, that was going to be basically left up to you. I think the whole focus from the very beginning, whether it is the actual notice of

contest to the June 22 submissions by the attorneys, really truly focus on the machines and the malfunctioning of the machines.

So that is the only caveat. And I understand what Mr. Ehlers is saying. The only thing at this point, you know, how relevant it is going to be for us to resolve this particular issue predicated on the grounds as asserted by the contestant. But I want to make sure, again, for both sides, the contestant and the contestee, you have had for your review and such the submissions by the attorneys representing the parties, is that correct?

Mr. BARKAKATI. Yes. And I should quickly add that you are right, our plan actually has been very specific to say that we are focusing on whether the machine contributed. And you know as much as in that scope of course it doesn't appear, the human factors doesn't appear as an item. On the other question of contestant and contestee submissions, yes, we do have access to those and we have reviewed those. And in our deliberation of deciding what is going to be done or not done, all those are factors to take into account. That whatever the contestant or contestee is suggesting, that testing be done or not done are factors that come into play in deciding what the final answers are for what it is that could be done to figure out if the machines contributed to the undervote.

Mr. MCCARTHY. Will the gentleman yield?

Mr. GONZALEZ. Thank you very much, Doctor. Sure, I will recognize Mr. McCarthy.

Mr. MCCARTHY. The only thing I would say, I have a transcript here from our first discussion when we were going through what the GAO was going to do. And I raised the question because I think I actually had a motion to put in ballot design. And the response back was, from the GAO, the ballot design is part of the machine. Obviously at this point, we are going to look at that. So, I mean, I think that was just going in regards to what Mr. Ehlers was saying, that that goes into the whole GAO report as well. Just for clarification.

Mr. BARKAKATI. Yeah.

Mr. GONZALEZ. All right. Anything further?

Ms. LOFGREN. I have a motion, if we are ready.

Mr. GONZALEZ. The Chair will recognize Ms. Lofgren for the purpose of making a motion.

Ms. LOFGREN. After consultation with Mr. McCarthy, I believe this is acceptable to all of us. I move that the chairman be authorized and directed to consult the task force by teleconference or other appropriate means to consider any GAO request received during the district work period and determined by the chairman to require task force concurrence. For the purpose of consultation as described in this motion all members of the task force must be in simultaneous contact.

To preserve our open process, any consultation under this motion will be made open to the public and press through teleconference or web technology in the House Administration Hearing Room. No final disposition of the underlying Florida District 13 election will be made pursuant to this procedure.

Mr. GONZALEZ. The motion has been made.

[The information follows:]

Task Force Motion #5
Offered by Rep. Lofgren
August 3, 2007

**GAO district work period requests**

I move that the Chairman be authorized and directed to consult the Task Force by teleconference or other appropriate means to consider any GAO request received during the district work period and determined by the Chairman to require Task Force concurrence. For the purpose of consultation, as described in this motion, all members of the Task Force must be in simultaneous contact.

To preserve our open process, any consultation under this motion will be made open to the public and press through teleconference or web technology in the House Administration hearing room.

No final disposition of the underlying FL-13 election will be made pursuant to this procedure.

Mr. GONZALEZ. Any discussion? All right. All in favor signify by saying aye. Aye. Any opposed? Around here you never know. Some people vote yes before they vote no and so on. The task force meeting stands adjourned. Thank you.

[Whereupon, at 10:42 a.m., the task force was adjourned.]

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