U.S. DEPARTMENT OF ENERGY

PUBLIC HEARING

POLYGRAPH EXAMINATION REGULATION

Notice of Proposed Rulemaking (NOPR)

Docket Number CN-RM-99-POLY

P R O C E E D I N G S

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PANEL MEMBERS PRESENT:

GENERAL GENE HABIGER, CHAIR
DOUGLAS HINCKLEY, Office of Counterintelligence
LISE HOWE, Office of General Counsel
WILLIAM HENSLEY, Office of Defense Programs

(Proceedings begin.)

GENERAL HABIGER: Good morning, ladies and gentlemen. I'm General Gene Habiger, United States Air Force Retired, Director of the Office of Security and Emergency Operations. On behalf of the Department of Energy, and particularly Secretary Richardson, I'd like to thank each and every one of you for taking the time to participate in this public hearing concerning the proposed polygraph program.

Secretary Richardson has personally asked me to be here today to listen very carefully to your comments and concerns and report back to him. Let me assure you we take this issue very seriously and also your concerns very seriously. The purpose of the hearing is for DOE to listen to your comments on the Department's Notice of Proposed Rulemaking.

This is a time for us to listen and to understand your concerns. It is not a forum to debate the issues. We are here, focused on what you have to

say. Your comments are not only appreciated, they are absolutely essential for this rulemaking process.

The Department of Energy proposes regulations for the use of polygraph examinations for certain DOE and contractor employees, applicants for employment and other individuals assigned or detailed to federal positions at the Department of Energy.

The proposed regulations describe the categories of individuals who would be eligible for polygraph testing and controls for the use of such testing as well as for the prevention of unwarranted intrusion into the privacy of individuals.

These regulations are being proposed to comply with various executive orders which require the Department to protect classified information.

These regulations for the use of polygraph examinations for certain DOE and contractor employees are intended to protect highly sensitive and classified information and materials to which such employees have access. This rulemaking also proposes conforming changes to regulations governing the Department's Personnel Security Assistance Program, also known as the PSAP program, as well as the Personnel Assurance Program, also known as the PAP program.

If you have not already read the Federal

Register Notice from 18 August of this year, I urge you to do so. Copies are available out front at the registration desk.

The comments received here today and those submitted during the written comment period, which ends October 4th, will assist the Department in the rulemaking process. All written comments must be received by this date, for October, to ensure consideration by the Department. The address for sending in comments is Douglas Hinckley, United States Department of Energy, Office of Counterintelligence, CN-1, Docket No. CN-RM-99-POLY, 1000 Independence Avenue, Southwest, Washington, D. C., 20585.

In approximately 14 days, a transcript of this hearing will be available for inspection and copying at the Department of Energy's Freedom of Information Reading Room in Washington, D.C.

The address is specified in the Federal Register Notice and is also available at the registration desk. The transcript will also be placed in DOE's internet site at the following address: home.doe.gov/news/fedreg.htm. In addition, anyone wishing to purchase a copy of the transcript may do so

by making their own arrangements with the transcribing reporter sitting here in the front.

This will not be an evidentiary or judicial type of hearing. It will be conducted in accordance with Section 553 of the Administrative Procedures Act, 5 USC Section 553 and Section 501 of the DOE Organization Act, 42 USC Section Code -- Section 7191.

In order to insure we get as much pertinent information and as many views as possible and to enable everyone to express their views, we will use the following procedures.

First, speakers will be called to testify in the order indicated on the agenda. Speakers have been allotted five minutes for their verbal resp -- statements. Anyone may make an unscheduled statement after all scheduled speakers have delivered their statements. To do so, please submit your name to the registration desk out front before the conclusion of the last scheduled speaker. Questions for the speakers will be asked only by members of the DOE panel conducting the hearing.

As I said, the purpose of the hearing is to receive your comments and concerns on DOE's Notice of

Proposed Rulemaking. I urge all speakers to provide us with your comments, opinions and pertinent information about the proposed rule.

Please remember that the close of the comment period is October 4, 1999. All written comments received will be available for public inspection, again, at the DOE Freedom of Information Reading Room in Washington D. C. The phone number there is (202) 586-3142. If you submit written comments, include, please, ten copies of those comments. If you have any questions concerning the submission of written comments, please see Andi Kasarsky, who is at the front desk. She can also be reached at area code (202) 586-3012.

Any person submitting information which he or she believes to be confidential or exempt from law from public disclosure should submit to our offices in Washington at the address I just gave you a total of four copies, one complete copy with the confidential material included and three copies without that confidential information. In accordance with the procedures established in 120 CFR 1004.11, the Department of Energy shall make its own determination as to whether or not the information shall be exempt from public disclosure.

Again, let me emphasize that we appreciate the time and effort you have taken preparing your statements and are pleased to receive your comments

and opinions.

I would now like to introduce the other members of the panel. Joining me today is Doug Hinckley, Program Manager, Polygraph Evaluation Board, Office of Counterintelligence. Doug?

Lise Howard -- Howe, excuse me. Lise is an attorney with DOE's Office of General Counsel.

And finally, Bill Hensley. He is the Director of Office of Security Support with DOE's Office of Defense Programs.

Before we begin to hear your comments, we thought it would be extremely valuable to provide you with a short briefing on polygraphs. We are well aware there's lots of confusion and many misconceptions about this issue. Last week, we held an in-depth briefing at each of the labs. This morning's briefing provides some of that same material.

First, I'd like to call Dr. Andrew Ryan, Director of Research for the Department of Defense Polygraph Institute. And following him will be Dave

Renzelman, Polygraph Program Manager for the Office of Counterintelligence, Pacific Northwest National Laboratory, to provide that briefing. Andy?

DR. RYAN: Thank you, General. And while

the computer or the projector is warming up, may I just take a minute to correct the agenda that we have? You see Dr. Gordon Barland's name as the presenter from the DoDPI. I'm here today with a feeling that I'm sort of pinch-hitting for Mark McGuire. Dr. Barland has been with the Polygraph Institute for a number of years and has been one of our key researchers in trying to increase the credibility and the profession itself. And he has taken ill this morning, so I will be filling in and hopefully using his slide presentation and referring to it -- we are not getting the slides.

If I could, being, I guess, a former instructor and adjunct faculty with the University of South Carolina, I tend to start off with a definition of everything. And if I can today, let me describe or define the polygraph, or the psychophysiological detection of deception, for you. The polygraph, as it's commonly called, is the forensic science where we look at the relationship between physiological activity and the emotions that are taking place within

the individual or the subject that is being tested at the time.

The polygraph program, now, which is housed at the Department of Defense Polygraph Institute,

trains all federal polygraph examiners. We now have 22 federal agencies with polygraph programs. Twelve of those agencies conduct the same type of polygraph that is being proposed here, the counterintelligence security screening.

DoDPI, or the Polygraph Institute, sometimes called "DPI," is the sole training institute for all federal examiners in the United States. It has also been cited by numerous investigations or inspections that is being a first-class institution. And we teach at the graduate level. So all of our students coming in have at least a minimum of a baccalaureate degree, and all of our instructors have master's degrees and above. So everyone in the research division has a Ph.D. degree.

So DoDPI, in addition to teaching the basic polygraphy course to the federal examiners, is also required to teach the continuing education courses of which we are continuing to add to that, because each of our examiners has a requirement from their

accreditation to have 80 hours of continuing education every two years.

Each agency -- I might mention, each of the 22 agencies that we are responsible for teaching the polygraph examination examiners, has their own quality

control program. You're going to hear much more about this in terms of the specifics of the DOE program. But what it simply means is that no exam is administered without someone verifying the results before the results are released.

In addition to that, the DoDPI has its own quality control unit, and we have inspectors that go out and inspect the inspectors, if you will. So they go behind the quality control units of every agency, and we conduct our own investigations and inspections of these agencies to make sure they are following the standards that are published and taught at the DoDPI.

We have written federal examiner manuals that are produced by the Polygraph Institute. So we have guidelines that are -- to try and meet the standards that are necessary for what we think is important coming up, in that we are seeking accreditation from the Department of Education. We are very optimistic that within the next 12 months, we will be offering a master's degree in forensic

psychophysiology. We are in the process, as many of you are aware, of going through our inspections and site visits at the moment, and everything seems to be going according to schedule.

The curriculum, which is a very extensive

course for the examiners, is almost 14 weeks, where the examiners will spend at the Polygraph Institute. They are required by the curriculum to receive 40 hours of physiological science and 40 hours of psychology before they ever begin to start to learn the testing formats and the more applied parts of it.

The instruction, because I originally got involved with the Polygraph Institute as an instructor, is intense. And I assure you it's not a program that these people have a lot of free time. They are spending a great deal of time learning how to do something that is very, very sensitive in the way that they apply it.

The curriculum is based on the research. And the Polygraph Institute, by Congressional mandate, has two missions. It has one mission to provide instruction to the federal examiners. It has a secondary mission to do the research for the entire polygraph community.

Since I've become involved with the Polygraph Institute, I've found that we have a very symbiotic relationship with instruction, in that what we produce in research gets into the classroom almost immediately, and what they produce in terms of outcome in the classroom, what we learn from observing the

administration of the exams at the Institute is something that we then take back to research. And we try to answer more research questions.

So the curriculum is based on the research that we do at the Polygraph Institute. The curriculum changes based on new evidence that we find in terms of how to improve the process itself. And it is a process, as you will hear. It involves much more than just the administration of an exam.

I want to speak to the accuracy, sometimes confused as validity and reliability, but we'll talk about accuracy for a minute in terms of the polygraph and what we know about it today. There are two types of accuracy that we are concerned with. Of course, one is the true positive. Can we detect, using this type -- this PDD process those people who are being deceitful or not entirely candid with their answers?

We also want to know, in the true negative sense, is there -- can we clear truthful people? Can

we identify those people -- based on their responses to our questions, can we identify those who are being honest with us and have nothing to hide from the examiner?

But there are two types of errors that we are very concerned about, one of which -- and I guess

your concerns are depending on whether you're the examiner or the examinee. We have what you know as the false positive, the occasion where a person might be identified as being deceptive, when, in reality, they are telling the truth. And so this is a concern for research. It's a concern for the whole polygraph community, in that we don't want to make these types of errors because we are misidentifying what is happening in the exam.

But we also have something that is much more sensitive in some cases, the false negative, where we actually let somebody slip through the system. I'll speak very briefly in a moment as to how this might happen.

What is the accuracy of polygraph as we know it today? There is lots of literature, good and bad literature, on the polygraph process. There is lots of controversy as to how accurate or how much utility

polygraph has. What we do know is that the current research tells us that with all available methods or technologies that we have, there is nothing more accurate, there is nothing more effective than the polygraph process itself, because it gets to the root of the issues by going directly to the subject at hand and identifying any areas of concern with the subject,

as opposed to the more indirect route.

What have been the problems in the past with polygraph research, and what has helped to create some of the controversy? As you know, in terms of doing analog research, there is a problem in trying to create the exact frame of mind or the environment in which the subject might be tested under in the real-life situation.

What we have done at the Polygraph Institute not only internally, but we fund external research on a regular basis, is we have tried to develop those things which we could call mock crime and mock screening scenarios. As you can imagine, it would be very difficult to create in the mind of a subject, whether they be a participant from a major university fulfilling their requirements for a introductory course, or whether they're paid subjects to come into the Institute, it's very difficult to imagine yourself

being a spy or being a criminal when you are not. And so one of the problems that we've had with our laboratory studies is that we have a weakness in trying to create the true emotions within the person that we are seeking to try and measure.

The strength of the analog study, the laboratory study, is, we know beyond a shadow of a

doubt who is guilty and whom is not, because we are telling them in their briefings what we would like for them to do or not do.

We also have field studies that we look at. Now, field studies is what we would like to have a lot of evidence to make what we find generalizable to our community, to the polygraph community. The strength of the field study is, this is real life. The people that are being tested or evaluated are actually experiencing the emotions that we are trying to get a read on.

The problem or the weakness with the field study is it's very difficult in most cases to find what we call ground truth. And that means to find beyond a shadow of a doubt in the end of the process whether the person was truthful or if they were honest, but, you know, based on the subject matter

that we're testing.

As you can imagine, sometimes ground truth is easy. Someone confesses to a crime. But if we do not get a confession and we never know who committed the crime, if it goes unsolved, then we never really establish ground truth.

Recent research -- I'm going to try to bring you up to date on some of the recent research and the

empirical studies that we're doing now and that some of them are actually still in process. We have conducted at the DoDPI three mock screening studies where we have tried to use as much of an influence on our subjects as possible to create this emotion inside of them to simulate being somewhat of a spy or someone that's -- that is doing something that we program into study that we would like our examiners to try and detect later.

Excluding the inconclusives -- and Mr. Renzelman will speak to that in a moment -- but inconclusives are when the results of the polygraph exam are unclear, we cannot make a call whether the person has been deceptive or entirely truthful -- we find that the examiners are 93-percent accurate in choosing -- within these mock-guilty scenarios, finding the person who did commit the crime that we

asked them to commit. We also know that 94 percent of the time, they are able to identify those that we programmed as being the innocent subject.

In a field study, to try and find out, to verify the accuracy or the validity of that, that high rate, we have conducted with nonfederal examiners now -- we have to distinguish between the training of the nonfederal and the federal examiners. The federal

examiners go through probably a much more extensive program than the nonfederal examiners. But this is a, I guess, a gold mine for us in terms of going out and collecting our research data.

In a larger study, if we take out the inconclusives, we found that the program deceptives subjects, we were only 72-percent accurate on them and 87-percent accurate on the innocent subjects.

In a most recent study -- and this is fiscal year '98, this is going to be important information, I think, for most of you, because this is what we are here talking about today. In a study that we conducted with over 7400 subjects, people in the Department of Defense that were screened -- these are real cases -- we found that 98.3 percent of the subjects we tested came out to be truthful; in other

words, no significant response, no reason to question the truthfulness of the subject.

I'll skip for a minute on the 110 subjects that we found that there was a significant response, and then later we found out differently. We had two subjects in this -- in this study, or in this real field scenario, that basically the exam came out with a no opinion. And you will hear later how those types of cases are handled.

But I'd like to point out that in the next two rows, the four subjects that were found deceptive, that means that we had a significant response during the test, and the 11 subjects that we had a significant response, and the difference between these two is in the case of the four people, they admitted to something that caused that significant response. So they confessed to some behavior that was of concern.

In the 11 subjects that had significant responses on the first test, they were then questioned about that significant response and then tested again, and we found them -- that their admissions were still not clearing up the exam, that they were continuing to have significant responses.

So this would be the focus of what you'll

hear about later and how we determine whether or not these people are telling us the truth.

But let's look back up at the top for a minute, the 110 subjects that had a significant response on the first test, and then the examiner said, Well, you know, what do you think is causing the problem? And so they discussed it. The admissions were then talked about, the things that were causing the significant response. And we found that the

subject was actually being truthful.

So this is the -- probably, the false positive in the beginning, but then turns out to be the true positive, because we've identified them as being honest people.

The bottom line in what we know about the current technology, the current polygraph process, is that the chances of coming out with a false positive error is one in 480. A false negative rate is a little bit harder to determine, because, as you can imagine, the false negative, as I explained earlier, is when we do allow a deceptive person to get through the system. And I'll talk about that in just a minute in terms of specific cases.

One of our concerns at the Polygraph

Institute is, even following the Cold War and changes in our global, I guess, economy and everything else in terms of the fall of Communism and other political events, we do know that the use of polygraph is increasing internationally. We do know that there are 68 countries now that have polygraph capabilities. It's not just an American technique. It is something that is spreading globally. We also know that there's an increasing number of intelligence and counterintelligence programs internationally using

polygraph.

Our biggest problem in polygraph seems to be that which we call countermeasures. Now, this is an attempt by the subject to defeat either the exam or the examiner or the system itself. It is a process. It does involve a human interaction. It does involve an instrument. And it does involve a quality control process, as we talked about.

Countermeasures are those things that people can be taught. And this is information that's widely available on the internet. We have a gentleman named Doug Williams that has a Web page called "No Polygraph" or something like that. This information is taught in manuals and information provided to subjects who would like to, for some reason, defeat

the polygraph.

There are many uncertainties about the use of countermeasures. And they can -- there are obviously hundreds of different types of countermeasures that can be applied. What we do know is that people have been successful in the past in using countermeasures to defeat the polygraph exam. The Ames case was an example. He was taught by the Soviets how to defeat our process. This brings light to the importance of us having a continuing program

and knowledge of what's going on in other countries.

Federal examiners at the Polygraph Institute are now being trained and taught, not only in their interpersonal skills, but in their technology, the use of the instrument, the algorithms that read the instruments and how to detect these countermeasures. So it is something that we will always have to be aware of.

In a recent case we found, London & Krapohl have published an article in a polygraph journal this year, where a subject that was taught the countermeasure process by Mr. Doug Williams was not able to defeat the polygraph. And the same in some of the cases that we are dealing with now. So we always

have to stay one step ahead of, if you will, the people that we are testing.

I hope that I was able to provide the types of information that Dr. Barland would. Thank you very much for your time.

MR. RENZELMAN: Good morning. My name is David Renzelman. As the General indicated, I am a employee, a contract employee, with the Pacific Northwest National Laboratory.

And I should make it clear that I'm on detail to the Office of Counterintelligence, to

Director Edward J. Curran, and I work for him. Anything that I do with the polygraph program, anything that I do with your polygraph test does not go to anybody at the Pacific Northwest National Laboratory. I have a direct report assignment. I take my orders from and provide my reports to the Director of Counterintelligence.

And I am the Polygraph Program Manager for the Department of Energy for General Habiger and his programs as well as Ed Curran and his programs. And polygraph has gone through an evolution, where it used to be called a lie detector, sometimes still is, a polygraph, and now it's a psychophysiological detection of deception. I have great difficulty

trying to make that clear to many people, so I refer to it as polygraph, and I will today.

A polygraph is nothing more, in my estimation, but a means and mechanism by which we can see externally on paper how a person is feeling internally during a formal process where a question that has been agreed to by the person giving the exam and the person taking the exam, as the person who's taking the exam thinks about it, answers it and continues to think about it. And if the responses, physiologically, or the emotion that is displayed by

the person answering that question troubles them, it gets to be shown on paper, and it then troubles the examiner.

So you might think about, well, what could the questions be? We have really four questions pertaining to national security. And they encompass questions about espionage, sabotage, to include terrorist activity. We saw an act of terrorism on TV last night. You never know what's going to happen. And in the business that you folks are in, it's just kind of nice to know that nobody has involved in terrorist activity up to the point of the time of the test, as well as espionage. Unauthorized disclosure

of classified information, and lastly, unauthorized contact with a foreign intelligence service.

So let me talk about those four very briefly. And let me say that espionage is not something that you can fall out of bed one morning and do. I mean, it takes a conscious act and effort and planning and some overt act to commit. It is the unauthorized, unlawful and illegal disclosure of classified information to a foreign intelligence service or representative of a hostile or foreign government, who could take that information and use it to their benefit and the detriment of the national

security of the United States. Most people who commit espionage take classified information and give it to a foreign intelligence agent.

Sabotage could be anything from destroying a computer system to fixing it so a missile would not go to its intended target or blow up in place, or a ship to sink or an airplane to crash. Those are all examples of sabotage, and there are numerous others.

An unauthorized disclosure of classified information is probably the most prevalent in people who are in the business that we're in. And it's earned a nickname called "pillow talk." There are a lot of people who have access to classified

information who come home and may talk to a significant other, friend, relative or just a neighbor, and in general conversation mention something to that person who does not have a need to know, access to or a clearance for. That would be an unauthorized disclosure of classified information.

My boss and General Habiger have mandated that we are interested in only disclosure of classified information to foreign intelligence services. We are not concerned with pillow talk. Pillow talk, to me, and the powers to be, are really two things: A, not terribly intelligent; and B, a

security infraction of some sort. And that's the Laboratory's responsibility. We're here only to verify that you're working for our government and not another government at the same time.

So there are other kind of questions that are asked on a polygraph exam, because if we ask you those, and we don't see any physiological responses on your polygraph test in three parameters, which are respiratory activity, electrodermal activity and cardiovascular activity -- and in the interest of time, if you want to talk about that in depth later, I'll be happy to do it with you one-on-one -- and if

we don't see any physiological responses to those questions, one would tend to think you're telling the truth.

So we have diagnostic questions that we would ask and ask you to lie about so that if you were going to tell an intentional lie, we could see that you have the capability of providing those expected physiological responses.

The testing process itself is done in two parts: Test A, Test B. Either one of them takes about eight minutes to conduct, but it's going to take us about an hour to get you ready to endure that eight minutes, because we have to make sure that the

definition of those targets that we talked about, espionage, sabotage, disclosure and contact, mean the same thing to you as they do to me.

And a real-life story, when I was doing testing for the NRO before they had their own program, back in the '80s, at TRW in El Segundo, California, we had an audience of 47 people. And I thought it would be important for me to determine the term "espionage," meant the same to them as it did to me.

And I gave them all a piece of paper and asked them to write down what they thought it was. And one person wrote back -- and I still have it, and

I'll take it with me to my grave -- but she said -- it was an Air Force female captain -- said, "Yes, I've committed espionage, but I only did it twice. I was on travel both times. I did tell my husband about it. I won't do it again, and we're undergoing marriage counseling now."

And how tragic would that be if I had not made sure that "espionage" meant the same to her as it did to us. And that's why we take the time to prep you for that exam.

Then the data from the examination is computerized. It's printed out on paper, and it's analyzed by the examiner. That's phase one. In order

to insure for you and the Department of Energy that the results of that test are accurate, it is replicated by a second examiner in the blind who evaluates your test. And that's called quality control.

And DOE does not stop there. After we have two examiners coming to the same conclusion, that test, your test, is given to a supervisory examiner who does the same thing. And DOE does not stop there. Then it goes to the Office of Quality Control, which is my office, as well as Program Manager. And

the test isn't over until it has gone through the quality control process. Then and only then is the test completed.

And the results of that test are provided to the Director of Counterintelligence, and only the Director of Counterintelligence, nobody at the Laboratory, not your supervisor. Not anybody here at Sandia would know the results of your test.

Depending on what it is -- and we expect the greatest majority of it to be no significant responses, because that's the track record in this kind of business, it's a verification process -- then the results are given to them, and the test is over.

Now, of course, during the testing process,

if you tell us, like some people have, and one person did, told us that he took the location of the nuclear warheads in this country and took it into the Russian Embassy and gave it to the First Secretary, who he had met at a party and had asked for that information, we would like to talk to you a little bit more about that. So that, then, is passed on to the Director of Counterintelligence, and a determination is made what happens to that information. And that's above my level of tasking.

The secretary of Energy has told me that if

anybody has significant responses to a polygraph test, a security question, and there are no explanations for that particular response, that response, in and of and by itself, will not be the sole reason for any action taken toward that person or that person's access to classified information. And the Director of Counterintelligence is the only person that has authority to authorize your test and to see the results of it.

We record each videotape -- or each exam on videotape. It's got a sound track, and it's got a video track. And nonissue polygraph tests, those that do not have any issue and do not require further testing, are destroyed. And we do it every 90 days.

We do that so we can collect them, because it's an incineration process. And we -- nobody has access to them but myself and the Director of Counterintelligence.

We use them for quality control purposes. And we take the data from the computer at the same time that the person is being videotaped taking the examination -- there's a camera right on you as you're taking the exam; it's unobtrusive, you'll know it's there, because we point it out to you -- but they take

the data from the computer and put it on half of the screen, so we can see the physiological responses at the same time that you are thinking about and answering the question.

And we're the only agency in the federal government that does that. But that provides us a means and mechanism, in addition to movement bars and what-have-you, to correlate whether any artifacts were caused by the instrument, by the person, intentionally, accidentally or normally.

And those are countermeasures.

We follow all the procedures that DoDPI sets forth. And he indicated the quality assurance program. As I can tell you that the Department of Energy was just inspected by their quality assurance

program last year. And we're the only federal agency to have zero findings on our quality control program. We're doing everything the way it was meant to be done, and we'll continue to do that.

I served as Chief of Instruction and Acting Deputy Director of that Institute from 1986 to 1991. I know what the book says. I helped write it. I hand-selected the examiners for DOE. And we'll talk about their qualifications in just a minute.

All of our people are DoDPI Basic or

Advanced course, and most of them are both, have advanced degrees in related disciplines and have to have been a counterintelligence officer in some federal agency before we even consider bringing them on as a DOE examiner. Most of them have been federal examiners, has an 1811 job series or civil service codes or DOD investigative experience, and they have to be DoDPI certified as well as DOE-certified. And our requirements are much stricter than any other federal agency.

In addition to that, we require full membership in APA, American Polygraph Association, and the American Association of Police Polygraphers. Many of our -- not many -- four of us hold elected positions in those associations. And I serve as the

Director of Quality Control for the AAPP, and I'm the subchairman for quality control for the APA and helped write their book.

We've been inspected and approved by the following agencies you see on the screen, and we have it in writing that these associations have gone on record having inspected our facility, that it is the finest in the federal government.

The two people that count, the people that

make the policy pertaining to polygraph in the Department of Energy, General Eugene Habiger, who is the -- whatever he said this morning, I can't remember all that stuff -- I call him the Security Czar, because that's what he is. And when you take a guy who headed up the entire Strategic Command for the United States of America and put him in charge of what he's doing here, that kind of makes sense.

Then you take Ed Curran, who was an Assistant Director of the FBI and was on detail to DOE to be the Director of Counterintelligence, and he's the guy that they sent to the Agency to straighten up the investigations program for them in the post-Ames era -- you've got two of the very best in the business. And that's who I work for.

And if anybody wants to ask me any questions

individually, I'll be happy to do that in the lobby. Thank you very much. General.

GENERAL HABIGER: Thanks very much, Andy, Dave. We've thrown a lot at you in this introduction. What I'd like to do now, as a matter, just, of protocol, is to take a 15-minute break or so, reconvene, and then we'll get on with our scheduled speakers.

At this point, I believe we have something

on the order of 14 scheduled speakers. When we finish the scheduled speakers, we'll get into the unscheduled speakers. And again, we look forward to your comments. So let's go ahead and take a break and reconvene in about 20 minutes.

(Recess held: 9:40 a.m. to 10:00 a.m.)

GENERAL HABIGER: Well, now is the time for us to move on to the reason we're all here, and that's to listen carefully to your comments on the Notice of Proposed Rulemaking. I would like to call our first speaker on the agenda. For the record -- and this is very important for our transcriber here -- that I ask each individual, please state his or her name and whom you represent before you make your statement. First, I'd like to call Ms. Diana Blair.

MS. BLAIR: That's me.

GENERAL HABIGER: Welcome.

MS. BLAIR: Well, thank you. My name is Diana Blair. I work at the System Analysis Group here at Sandia National Laboratories, though today I am representing only myself.

In the proposed policy, the statement that the DOE is aware of no scientific studies that establish that polygraph examination results are

unreliable for use as an investigative tool is quite disconcerting. Whereas we cannot discount that it may be useful as an investigative tool, that is not its intended purpose. It is intended as a screening tool. These are not the same thing.

We all know there's ample research that contests its value as a diagnostic method, especially for nonspecific incidents like screening. Its value as an investigative tool relies on its ability to invoke fear and intimidation. That is completely inconsistent with your repeated statements that you will be treating the examinees with respect and dignity. You will actually be treating us as common criminals.

A survey was conducted by myself and Dr. Robert Easterling that examines the impact polygraphing could have on recruitment and retention

at the Laboratory that is referred to in the policy. Details of the survey will be presented by him later this morning. But in general, the survey did reflect that a significant number of people would never have applied to Sandia if they knew they would be subjected to polygraphing. This clearly impacts the ability of the company to do our job.

I attended the technical briefing on

September the 7th and walked away with an erosion of what little confidence I may have harbored with regard to the polygraph's value. This is clearly the product of sound-byte security. It plays well to the media and Congress but has no real value at improving national security. This opinion is shared with experts in the field and with a number of employees here at Sandia, as was evidenced by our survey, in which almost 70 percent of the survey respondents agreed that implementing the polygraph will have no effect or even possibly a negative effect on security, while almost 85 percent of the respondents believe it will negatively impact morale.

Truly regaining the public's special trust requires that we respond responsibly to security issues and not punish, alienate and potentially destroy the ranks of workers who make our nuclear

deterrent possible.

As one of the viewgraphs in your September the 7th presentation reported, "Practical experience indicates there are far greater false negatives than false positives." This admission agrees with research in other areas, in that when you turn down the gain, or in this case, the threshold for false positives to

such an absurdly low value, you, by definition, raise the false negative rate to a level that almost certainly guarantees you catch no one who has violated a law or who is a threat to national security.

Therefore, you are subjecting loyal, patriotic Americans, who have devoted their talents, careers and sometimes their lives to insuring our nation's security to an intrusive weapon of intimidation, with virtually no hope of catching those who pose a threat.

Further, you run the risk of allowing spies to enter the ranks of workers through the accelerated background check or to exonerate themselves using this faulty technique.

The polygraph can be thought of in the same light as a faulty metal detector at an airport that does not sound an alarm when metal passes through it, but rather, sounds an alarm randomly. You may catch

people with such a device, but it has nothing to do with its performance. It is just a random search policy. The result is that people develop a false sense of security that can lead to catastrophic consequences in terms of security.

In a comment General Habiger made on his July the 21st briefing at Sandia, he compared urine

analysis for drug testing to polygraphs. He stated that they do not confirm guilt, but merely functioned as a deterrent. Coming from an analytical chemistry background, I vehemently contest this statement. Analytical instruments have verifiable precision and accuracy. Polygraphs have no such qualities.

I agree with others when they say that polygraphs are inaccurate, unscientific, demeaning and corrosive of trust. As a matter of fact, using the term "polygraph" to describe this technology has been called misleading, since it implies precision where precision does not exist.

In the polygraph technical briefing, the presentation was peppered with plenty of anecdotal evidence as to the value of the polygraph, how a spy was, quote, caught just in the nick of time. Unfortunately, there exists plenty of evidence to the contrary on how murderers were set free to kill again

and traitors not caught because of the polygraph. None of these were presented.

To a group of professionals from the hard sciences, it is difficult for us to believe in the veracity of claims based on personal anecdotes. Using statements like, We never would have caught an

individual like the CIA employee, Harold N. Nicholson, without the polygraph does little to draw support in these ranks. He received up to $180,000 from his Russian handlers in exchange for classified information over a two-year period. He spied for over a year before he was suspected.

If proper procedures were in place to examine financial records and money wired to employee accounts from foreign sources, he would have been caught when he first started selling information. How can we have any confidence that an organization that cannot perform adequate financial checks can accurately read squiggles on a chart?

In closing, I would like to respond to your position that DOE polygraph examiners are so highly trained, we should have no concern for their performance. Examiners who are trained at DoDPI have 14 weeks of training. Just for comparison's sake, licensed hairdressers in New Mexico attend school for

up to 18 months before taking their boards. Suffice it to say that their impact on my career poses less of a threat than your polygraphers. At least my hair will grow out.

GENERAL HABIGER: Ms. Blair, thank you very much.

The next scheduled speaker is Mr. Dave Baldwin. Mr. Baldwin?

MR. BALDWIN: Good morning. My name's Dave Baldwin. I'm in the Weapon Use Control Department. And I want to share a little bit of my own perspective on this.

I'd like to focus on the implementation process. As we struggle to understand the motivation for this effort to change the regulations to allow for polygraphy at the Labs, there are too many unanswered questions. I'm getting frustrated because no one seems to be able to answer a number of simple questions. A few such questions are as follows:

What is the intended outcome of this effort?

Is polygraphy being introduced as part of a routine screening process, or is a sample population going to be selected for a counterintelligence-scope polygraph examination? Or is it both?

Our contact person has advised me that she, too, would like the answers to these questions, and she expressed her own frustration at DOE's lack of communication. I have read and reread the proposed rule and am unable to find any definitive answers.

The technical briefing present by the Men-in-Black team last week raised more questions than it answered.

Ladies and gentlemen, this whole situation is beginning to stink and draw flies, but it doesn't have to. We all want strong national security. I served my country with the Fifth Special Forces Group in the Republic of Vietnam. I came through the battle of Loc Ninh in '67, and the TET offensive in '68. I was awarded the Bronze Star medal with a V device for heroism in ground combat, and I still carry in my side a piece of shrapnel from a 122-millimeter rocket.

I value a strong national defense. I especially value our Constitution, because I have seen firsthand what can happen to people who don't have its protection. I fought for our country when Bill Clinton was at Oxford dodging the draft and bashing our country. Consequently, I think I have a bigger investment in national security than most.

I also have no interest in seeing a bunch of

lawyers get rich because a poorly considered process was implemented in haste. If this must be done right -- if this must be done, then there's a right way to do it.

It seems clear that we're all going to have

to learn to live with polygraphy. From my own experience with polygraph testing, I believe that if one has nothing to hide, one has nothing to fear. However, most of the people I've talked with are either apprehensive or angry about it. Some have even said they will refuse the test. What happens if we all refuse? It is one thing to introduce polygraph testing as a part of a routine screening process, and it is quite another to compel a sample of a population to prove their loyalty and innocence without probable cause.

Therefore, the DOE must be extremely careful to avoid even a hint of a witch-hunt. Here are my suggestions on how to do it right.

1. Scrap this vaguely written proposal for oppression and start over.

2. In your new proposal, start by stating in clear, precise terms the desired goal of the process.

3. Describe in clear, precise terms the

steps of the process by which the goal will be achieved.

4. Include in the new proposal the set of protections for the examinee that are described in

Sections 22 through 25 of the Employee Polygraph Protection Act.

5. Describe in clear, precise terms how the selection of examinees will be accomplished.

6. After the set of examinees has been identified, make provision for the subsequent selection process to be indisputably random and define that random selection process in the new proposal.

7. Make provision for an appeal process, and don't allow a suspension to be decided by one person.

No. 8. Scrupulously avoid projecting even the appearance of arrogance or intimidation.

And finally, No. 9. Communicate. Be completely open about the process. This will lay out the ground rules up front and answer many of the questions that people have. And I believe that a random selection will at least partially mitigate the apprehension and possibly some of the anger that is present.

If the DOE continues on its present course,

a lot of folks are going to become alienated. And don't forget that alienation was the reason that Albert Einstein, Niels Bohr, Enrico Fermi and others chose to work for us rather than Germany. If you come

storming in here with a McCarthy-style witch-hunt, it will aggravate rather than relieve the anger and resentment that already exists.

On the other hand, we at Sandia National Laboratories have proven time and time again that we can do anything we set our minds to. So if you want real solutions to real problems, then let's pull together, roll up our sleeves and get to work. Thank you.

GENERAL HABIGER: Thank you very much, sir.

Next scheduled speaker is Mr. Larry Bertholf. Mr. Bertholf.

MR. BERTHOLF: This testimony is the first of four being presented consecutively by the Sandia Senior Scientists. The first three of these support our claim -- Al, could you turn it on, please -- that polygraphs will threaten national security.

Next, please. A subpanel of us have studied polygraphy, and we have written a report. That report is included in your information we submitted as part of our testimony.

This study has made us opposed to polygraph screening, because we believe it would decrease security. We believe it will produce a false sense of

security, result in a loss of talent, reduce employee morale and commitment and reduce innovation and program funding that could be used more appropriately.

We'll also have the fourth presentation by Lawrence Larsen, who will address fundamental defects in the instrument.

Polygraph accuracy is very questionable, especially in screening cases where ground truth is unclear. Three references up there indicate from the OTA report that it's open to countermeasures -- I'm sorry -- you skipped one.

DR. ZELICOFF: Sorry.

MR. BERTHOLF: -- from the OTA report indicate that there's very little research or evidence to establish its validity. In Andy's presentation, he gave some data from the DOD Polygraph Institute. Data that we have indicates that even in a controlled test with program examinees, accuracy was no better than 83 percent. In a field test, you would expect it to be less. And no one knows what the validity is, that there haven't been good tests of it.

Now, taking a faulty instrument like this and tuning the test for a 2-percent false positive rate completely negates the test. The false negative

rate will be so high that you won't catch anyone.

Also, a false negative cannot be determined by screening. No one's going to object to being called innocent; whereas, those that are called guilty will object. So the only way you'll find out is when you have a breach of national security.

Next, please. That false negative polygraph threat is very serious, we believe. The Ames case is just one. Besides innocent false negatives, our data indicates that countermeasures are effective. 92 percent of knowledgeable psychologists believe that criminals and subversives can beat polygraphs. So we cannot assume that passing a polygraph test indicates any trustworthiness. And to the extent that is shown in that quote by Drew Richardson, to the extent that we place any confidence in the results of polygraph screening will severely jeopardize our national security.

Next, please. I want to conclude by saying that polygraph screening is not a scientifically proven approach. It has many defects. If we rely upon it, it will provide a false sense of security.

And if it's not relied upon, they are, at the least, a waste of taxpayer dollars. We senior scientists

believe we should not use polygraph screening. Instead, we should strengthen more appropriate, more cost-effective and proven counterintelligence tools.

Next, please, Al. This is just a quick review of what will follow. I've done the false sense of security, and next will be Rob Easterling. I would like to thank you all for your kind attention.

GENERAL HABIGER: Thank you, sir. Next, Rob Easterling.

MR. EASTERLING: Thank you. I'm Rob Easterling, speaking for myself. My role here is to try to present a little data pertaining to what is obviously an emotional issue. So I hope some perhaps (unintelligible) facts will help us understand some of these issues.

First one. I'm addressing the area of retention and recruiting. The proposed rule states that some individuals think the rule could have an effect on recruitment and retainment. To address that, we conducted a small survey, a short survey of 600 technical staff members at Sandia, a stratified random sample, tried to focus on both the fairly new employees, midcareer employees and long,

high-experience employees.

This was done in a quick turnaround,

one-week turnaround period. Out of 600 surveys sent out, we got 450 back, which was pretty remarkable considering this was Labor Day week and so on. In fact, we did a short survey and indicated this was a scientific endeavor, not just a telephone call-in show. The bottom line, I'll provide numbers to illustrate it, is that polygraphing would have a substantial effect on-- substantial adverse effect on recruiting and retention.

Next slide. We asked four areas in the area of recruiting and retention. We asked, As a new hire, would you have applied to Sandia if employment required polygraphing? Asked, Would the requirement for polygraphing stop you from applying for a new position, that's referring to internal transfers from one program to another, one organization to another. If you were in a program position that required polygraph, would you seek to transfer out? And would you quit Sandia to avoid taking a polygraph?

Next slide. (Unintelligible) we provided -- Sandians are famous for analyzing every question. We provided for a "maybe" answer to all those, because circumstances can change your feeling one way or

another.

Here are the results summarized. In terms of, Would you not apply, 27 percent said they would not apply. It actually was more pronounced amongst the high-experience employees than the new employees, maybe reflecting the difference in job markets 20 years ago and now.

Another 30-some percent said they might not apply. So that's a pretty substantial impact on recruiting in terms of how many -- how much we'd have to increase our recruiting effort, how deep we'd have to dig into the pool to hire people. Talked about, Would you not apply for a transfer? 15 percent would not. 28 percent they might not apply for a transfer if it required polygraph.

Retention. Notice these kind of go down, these are in decreasing order of consequence in terms of if you decide against, the consequences are larger. And it's easier to think about not moving from where you are than it is to think about moving to someplace else.

In terms of retention, Would you transfer out? Let's see. About 9 percent said they would not. 23 percent said they might not transfer out if their current position required polygraphing to stay

in that position. And would you quit Sandia? 2 percent said they would. 13 percent said they might. So those are the basic results on that survey, again, out of 450 surveys, responses from 600 surveys.

A second point is, regardless of what the effect is on recruitment and retention, is a morale issue. We asked, What do you think the effect on morale would be of instituting a polygraph program?

And you can see that some 84 percent, as Diana referred to a few minutes ago, thought it would be a negative effect. And only 3 percent thought it would be a positive effect.

Asked them, What's the effect on security? About half the responders said they thought it would have a neutral effect, neither positive or negative. About 30 percent said it would have a positive effect, about 20 percent said it would have a negative effect. So a slight edge for the impression that it would have a positive effect.

Next. So the actual effects of the polygraph program can't be predicted. We can't say from these survey results exactly how many applicants might turn us down and so on, because, you know, when you are addressing a hypothetical question versus when you're addressing reality, you might act and respond

differently.

And also it depends strongly on the perceived fairness and effectiveness of the program as it becomes implemented, as some of the questions referred to just a couple of speakers ago get answered, if they get answered. But even if the effects were half of what the survey indicates, I think there is still a substantial effect on recruiting and retaining employees.

So that's the basis of our conclusion that indeed, will have an adverse effect. I would encourage the DOE and Congress to seek additional objective data. We know this is a difficult area to get good data in because of all the difficulties in understanding what ground truth is and so on. But I would encourage more effort to seek more data on these issues.

In my submitted written material, I have a written report on this, plus the attached set of comments. We also asked our survey respondents to provide comments. And some 150 of them did. So -- thank you.

GENERAL HABIGER: Thank you very much, sir. Mr. Al Zelicoff?

DR. ZELICOFF: My name is Dr. Al Zelicoff.

I'm a board certified internist, also a physicist. I practiced medicine for ten years, conducted thousands of diagnostic tests during that period of time. I'm going to comment on the effects on morale by giving you some illustrations about the arbitrariness of this test, the worse kind of arrogance, from the medical literature. Before I do that, I want to respond to a few things that have already been said this morning that I do think need to be addressed. General Habiger stated that we would not debate the issue of the reliability or utility of polygraphs today.

And I assume, General, you mean by that, in all fairness, that that debate was to have been reserved for the so-called technical briefings that we had about ten days ago. In my notes, General, from that very meeting, I recorded about a dozen specific questions that were asked and have not been answered, including such simple items as requesting Dr. Barland to provide a reference for claimed evidence that he said was in the medical literature.

Again, those have still not been answered. So I would ask you, General, thus, if we're ever going to have a scientific debate on the merits of polygraphy, and if not now with you and your panel, I

25 would ask with whom, and if not now, when?

1 Also, with all due respect to the
2 qualifications, independent evaluation and quality
3 control that were mentioned earlier this morning, this
4 reminds me of very similar statements made by the
5 chiropractic community, who, by the way, also have
6 many thousands of hours of training to become
7 chiropractors.
8 As a recent Rand study demonstrated, looking
9 at the utility, for example, of chiropractic
10 evaluation for the treatment of neck pain, which
11 included, by the way, a 50-percent representation of
12 chiropractors on the panel, the conclusion was that
13 repetition of worthless tests and procedures by
14 noncritical observers merely results in more worthless
15 expenditure, and on occasion, fatalities from stroke
16 and blood vessel and occlusion from chiropractic
17 manipulation. So it is, and I will now illustrate,
18 with polygraphy.
19 Can I have the first slide, please? I'm
20 going to demonstrate some of the arbitrariness that I
21 believe is inherent in polygraphy, as demonstrated in
22 the medical literature. I'm going to refer to two
23 general groups of people, people who are on
24 medications and people who have various diseases with

25 or without medications.

1 We know that all medications that are used
2 for the treatment of high blood pressure, congestive
3 heart failure and other cardiovascular diseases have
4 demonstrated effects on the autonomic nervous system,
5 including skin conductants as well as blood pressure
6 and respiratory response. Unlike Dr. Barland, I have
7 medical references for all of these claims, and I will
8 be happy to provide them to you.
9 Second, there are people who have diseases
10 not on medications who have demonstrable abnormalities
11 of their autonomic nervous system, precisely what you
12 claim to be measuring with polygraphy. This includes,
13 for example, but not limited to, HIV-positive people
14 without AIDS -- let me reemphasize, without AIDS --
15 who are on no medications, have not only demonstrated
16 autonomic nervous system instabilities, but also have
17 demonstrated galvanic skin responses or electrodermal
18 responses that are abnormal, as you like to call
19 them. In addition, this has been aptly with patients
20 with heart failure, asthma and diabetes.
21 The Department of Energy, by rule from the
22 Secretary, is a department of inclusiveness and
23 diversity. Polygraphy directly interferes with the

practical implementation of that policy, for the very reasons that I am illustrating here. The people who

are most vulnerable, the people who are oldest, the people who have infectious disease are all known to have autonomic nervous system abnormalities.

And there are no studies in the medical literature, none, that have been peer-reviewed that show the effect of autonomic nervous system disease on the results of polygraphy, either false positives, true positives, false negatives or true negatives.

Next slide, please. Lest you think that this is a trivial problem, this is a slide from the Pharmaceutical Manufacturers' Association, which shows that approximately 50 percent of all prescriptions in a $65 billion a year industry written in 1996 were for medications that act on the central nervous system or on the cardiovascular system or on the skin. This is not a small problem, not one that you can hand-wave away or claim that it's trivial.

Next slide, please. In addition, the arbitrariness and arrogance that you demonstrate is linked directly to the pseudoscience that has already been illustrated this morning. There is a complete absence of the gold standard, so you cannot even tell what a true positive or true negative is. And the

DodPI has published no studies that have been reviewed in the scientific literature, by admission of

Dr. Barland last week.

As one measure of the inadequacy of this test, we can look at the ratio of false positives to true positives, which, even by your own statistics, are very, very high, and therefore, as a measure of cost, that is, cost of the total number of false positives as a function of true positives, is exorbitant.

Next slide, please. Let me ask you to skip to the last slide, since I only have a minute.

In summary, polygraphy is a tool, as Dr. Barland has correctly stated. But like any tool, it has to be used for the right job. In a screening mode, the scientific literature, as opposed to opinion, is crystal clear. Polygraphy is fraught with danger. It has false leads, systematic errors, discrimination based not on deception, but on medical disorders and incalculable damage, therefore, to the very item you claim to want to protect, national security.

Polygraphy is not merely worthless. It is worse than worthless. The Department's policy is

wrong-headed and poorly crafted and has no scientific justification in the literature. Used in the mode you propose, screening polygraphs remind me of the story

of a tale of a child with a hammer where everything looks like a nail that needs to be pounded into the wall. And as any parent will tell you, that results in massive havoc and absolutely no productivity.

But let me put it another way. Were I, as a physician, to have employed a similarly inappropriate test in a screening mode to screen for a disease such as cancer, I would certainly have been successfully sued for malpractice. And were I to use it systematically and repeatedly, as you are proposing, I would have my medical license revoked.

So for all the reasons that have been in the Senior Scientists' report, the Department's policy is destructive of national security. Saul Bellow wrote, "A great deal of intelligence can be invested in ignorance when the need for delusion is great." This is the height of delusion. Thank you.

GENERAL HABIGER: Yes, sir. Before you leave, Dr. Zelicoff, Ms. Howe has one question, and I have one comment for you.

DR. ZELICOFF: Please.

MS. HOWE: Could you imagine crafting an

exception for medical reasons which would adequately provide protection for the, you know, potential pool of, you know, people eligible for a polygraph?

DR. ZELICOFF: Do you want a political answer or a scientific answer?

MS. HOWE: I'll take either one.

DR. ZELICOFF: Well, let me start with the science, since that's what I think we ought to be doing. I can imagine it only if appropriate studies were done on those subpopulations and compared to some gold standard. Those studies have not been published in the literature.

So what it would require, for example, would be doing the kinds of mock examinations or perhaps a guilty-knowledge test in patients who are on medications or patients with the diseases I've indicated who are either on or not on medications and comparing those with a control population. And that's not been done.

With regard to the politics, I'd rather leave that to someone else.

MS. HOWE: Thank you.

DR. ZELICOFF: Are there any other questions?

GENERAL HABIGER: One other comment. We are responsive. It is a technical foul for you to have asked six questions last week and not having gotten the answers yet. If you leave Andi Kasarsky your

phone number outside before you go home tonight, we'll have an answer for all six questions for you.

DR. ZELICOFF: Are you referring to all the questions that we asked?

GENERAL HABIGER: The six that you referred to.

DR. ZELICOFF: Okay. Very good. Thank you.

GENERAL HABIGER: Thank you, sir.

Next scheduled speaker, Mr. Lawrence Larsen. Good morning.

DR. LARSEN: Good morning. I'm Dr. Lawrence Larsen. I'm a former professor of physiology and computer science at the Baylor College of Medicine. I have over 200 publications in referee journals on the subjects of clinical neurophysiology. I am presently Senior Scientist in the Applied Physics Center at Sandia National Laboratory, but I am speaking on my own behalf.

I have serious questions concerning the competency with respect to the conduct of and

conclusions from polygraph examinations for counterintelligence. These issues of competence fall into four categories. The first of these are instrumentation artifact. The second is sampling

error. The third is a disregard for the physiological effect of aging. And a fourth is depreciation of pharmacologic effects, similar to what my colleague Dr. Zelicoff, has talked about.

Returning now to the first point, instrumentation errors and the artifacts thereof, we know from published information about how these examinations are conducted at the technical level, that the electrodermal response is measured with electrodes that are subject to polarization effects, thereby confounding the effects of the electrode and its ionic double layer with the skin potentials and skin resistances and skin conductants that are alleged to be measured.

Secondly, we've seen no evidence of calibration for constant voltage measurements on these electrodermal responses. In the contrary, what we find is an inattention to these measures, where these tests are routinely run in regions where the volt amp characteristics of the skin are force into

nonphysiological responses and nonlinear V:I regions.

Similarly, with regard to the cardiac measurement, this is not blood pressure. This is occlusive plethysmograph. The issue here is that the occlusion has to be set at a level which is low with

respect to the mean arterial pressure, and very likely low with respect to the mean diastolic pressure.

Again, contrary to conventional, standard and quality practice, what's recommended is cuff pressures that are too high. These cuff pressures violate the linear region that relates changes and pressure in the blood vessels to volumes under the cuff. And volume under the cuff is what's measured.

Next slide, please. These are just two examples. I could have gone on at length.

Second area of concern has to do with sampling errors. And what's the result of that? Unreliable outcome. Again, there's copious evidence for unreliable outcome. Taking the same two channels, the electrodermal response and cardio response, we have a mode of operation in machinery in, the so-called polygraph machine, which is known as the automatic mode.

This automatic mode is a technical measure to try to overcome the fact that there is numerous

electrode problems in terms of contact resistance, failure of physiological operating regions and so on and so forth, as I detailed in my first set of comments, and that this mode indeed conceals these artifacts.

The other mode, the manual mode, of course, has the electrodermal response skating all over the chart. If you've ever seen these things that haven't been corrected under the so-called automatic mode, you'll know exactly what I mean. And these skating responses due to the instrumentation errors in the first place highlight extremes, which, again, puts the subject at a disadvantage.

With regard to the cardio channel, the only valid metric is the instantaneous heart rate. The measures that are used, such as the systolic tip, the diastolic tip and the dicrotic notch trends are completely invalid because of the fact that it's operated in a nonlinear portion of the pressure volume region.

If we did things like that in medicine, this is what we would have: Doctors standing there with a divining rod on the patient, saying, Gee, I think you've got water on the knee. It doesn't matter that

you get answers. What matters is that the procedures that you follow are valid.

Next slide please. Moving on to the third area of concern, effects of age. When this is brought up, we usually get glib responses, such as, I don't think you've aged very much between the control

question and the relevant question. This, of course, completely ignores the fact that as people age, their arterial system changes. There is atherosclerosis, and there is hypertension.

These result in changes in the arterial pressure waves that are recorded by the cardio channel. They interfere with reflexes in the cardiovascular system. They interfere with the action of the heart against the hemodynamic impedence presented by the vascular tree.

To claim that these things are not important and that these things do not influence the result of the polygraph test and the responses of people to high-stress situations is simply rubbish.

Next slide, please. Continuing on, following the theme, again, from Dr. Zelicoff, drug effects. Failure, in fact, depreciation of drug effects, leads to interpretation errors. Again, taking the same two cases, electrodermal response, we

know that antimuscarinics completely block cholinergic sweating. So if you've had your eyes dilated, or if you're being treated for neural angle glaucoma (sic), you are SOL. Okay.

With respect to the cardiac channel, beta adenergic blockers, we know, affect heart rates and

the strength of contraction, but that these physiological effects are mediated by an overriding sympathetic level. So as the stress of the situation changes, the response of these drugs on the cardiovascular system changes.

And then finally, arterio-vasodilators again alter pulse pressure and the location and timing of the dicrotic notch, which we've already said is a invalid diagnostic tool based on instrumentation errors.

So what does all this mean? Well, it means I'm likely to have conclusions which are wrong. So here's Snoopy in the desert. He walks by a cactus, and he finds an oar. And he says, "This proves my theory that this whole desert used to be underwater." And he says, "Or my other theory that someone is missing an oar." We can't possibly reach correct conclusions based on a process like this.

Last slide, please. We believe that polygraphs should be limited as an aid to interrogation, the only area in which they've shown any utility, aid to interrogation in specific criminal investigations and not for screening.

Any use of polygraphs must be predicated on competent medical evaluation of compounding effects

due to instrumentation methods, the effect of age, the effect of intercurrent disease and the effect of intercurrent pharmacotherapy.

And this is exactly, I believe, the question Ms. Howe was raising with Dr. Zelicoff, how could we do this? And the answer that he gave is quite correct, that it requires investigation, requires valid studies and so on. In the absence of this, I don't think we should proceed. That concludes my remarks.

GENERAL HABIGER: Thank you very much, Dr. Larsen. Next I'd like to call Pauline Dobranich.

MS. DOBRANICH: Dobranich.

GENERAL HABIGER: Dobranich. Thank you.

MS. DOBRANICH: My name is Pauline Dobranich. I am a distinguished member of technical staff at Sandia National Labs, but my comments reflect my personal concerns. I have six comments on the

proposed rule on polygraph examinations.

Comment No. 1: Part 709.4 describes who will be required to take a polygraph. Item 6 states that polygraphs will be required for those positions which involve access to information on the design and operation of nuclear weapons and associated use and control features. Because of the vagueness of this

statement, it is not clear who is eligible, all people with "Q" clearances or perhaps a subset.

Because of this ambiguity, the DOE does not know how many people will be impacted by polygraph examinations. Thus, the DOE cannot properly prepare for conducting polygraphs, nor predict the adverse effects.

Comment No. 2: Part 709.13 and 709.14 describe the polygraph examination process as voluntary. Yet if the individual is an incumbent in a position where polygraphs will now be required, the DOE may deny the individual access to that information or involvement in those activities. Thus, an individual could lose their position for refusing to take a polygraph examination. Obviously, the polygraph examination is not voluntary, and it is ludicrous for the DOE to suggest otherwise.

Comment No. 3: Part 709.15 briefly describes the process for polygraph examinations and the follow-on evaluation process. The proposed rule does not specify how long the process will take or whether the individual retains their clearance during the process. The eligibility evaluation panel and their qualifications are not defined. The individual has neither legal protection, nor is there a process

for the individual to appeal the decision from the eligibility evaluation. The individual does not even receive a copy of their records. This process is unsatisfactory because it does not protect the legitimate interests of existing employees.

Comment No. 4: As described in Section H -- excuse me -- Section No. II, entitled "Background," the President has instructed DOE to develop and implement specific procedures to protect highly sensitive and classified information at its facilities. Can the DOE demonstrate that polygraph examinations will provide better protection of highly sensitive and classified information?

In 1998, the Supreme Court reaffirmed that polygraph results are inadmissible in court due to reliability concerns. Rather than depend on unreliable polygraph examinations, the DOE should

improve the quality of background investigations.

Comment No. 5: In Section IV, subsection B, entitled, "Regulatory Flexibility Act," the DOE certified that the proposed rule will not have a substantial impact on a significant number of small businesses. Because the DOE does not know who or how many people will be affected by polygraph examinations, they also do not know how many of these

people are employed by small businesses. Therefore, the DOE cannot certify that the proposed rule will not have a substantial impact on small businesses.

Comment No. 6: In Section IV, subsection E, entitled, "Treasury and General Government Appropriations Act 1999," the DOE states that the proposed rule will not have an impact on the autonomy or integrity of the family as an institution. What is the basis of this statement? Because the DOE has not specified the duration of the eligibility evaluation, the individual could be in limbo for an extended period of time. This causes concerns about whether the individual will continue to have a job, concerns about making mortgage payments and morale problems associated with a tarnished reputation. I think the DOE is extremely naive to believe that this will not

impact the family.

In summary, although Section IV, subsection I, entitled, "Executive Order 12988," states that the DOE has a duty to provide a proposed rule with clarity and without ambiguity, my comments have identified several areas where the DOE has failed to be clear and has not considered the ramifications of the proposed rule.

Therefore, until the ambiguities have been

addressed and the impacts have been evaluated, the DOE should abandon the proposed rule on polygraph examinations. Thank you.

GENERAL HABIGER: Thank you very much, Ms. Dobranich.

Next scheduled speaker is Mr. Stewart Silling. Mr. Silling?

MR. SILLING: My name is Stewart Silling. I'm representing myself. In the late 19th century, it was thought by some that you could tell whether a person was a criminal or not by measuring the shape of his head. This technique had two problems: False positives and false negatives. But national security was at stake. Society had to be protected from criminals. So many authorities thought this was a useful test.

In the days of witch trials, a suspected witch was sometimes made to recite the 23rd Psalm or other text. If she mispronounced any of the words, this proved she was a witch. This technique had two problems: False positives and false negatives. But national security was at stake. Society had to be protected from witches. So many professional witch-hunters thought this was a useful test.

Of course, DOE would never conduct a

witch-hunt. But why is it so easy to see the absurdity in this witch test and so hard for many people to see it in the polygraph test, when the two methods are almost identical? Both methods are based on the premise that if you get nervous when you say something good, then you must be bad. A leading authority on polygraph testing from DOD who spoke here at Sandia last week -- and we heard another expert say the same thing here this morning -- admitted that polygraph testing has two problems: False positives and false negatives. But national security is at stake. Society must be protected. So these are not significant problems.

The Security Czar has been quoted as saying the reliability of polygraph testing is 99.9 percent.

I don't know if that's an accurate quote. This is a claim that some would say is outlandish. But let's assume the figure is correct. This means that out of 1,000 people, perhaps one false positive will result. People who are ignorant of mathematics would then be 99.9-percent certain that this person is a spy.

Chances are, however, this false-positive person is simply predisposed to failing polygraph tests. So he would also fail a second or third or fourth test. By then, the pressure on the

investigators to dig up some dirt on him would be overwhelming, because no one wants to go 0 for 1,000. They might find out this guy once ate in a Chinese restaurant or that he has a Persian cat.

Meanwhile, a real spy would be well-versed in the techniques for passing the test. One of the most damaging spies in U. S. history, Aldrich Ames, repeatedly passed polygraph tests at the CIA. Ames could never have gone undetected for so long without being shielded by his exemplary polygraph test results. What more conclusive proof could you ask for that polygraph testing is not only worthless, but actually damages the national security rather than enhancing it?

Soldiers sometimes have to make the ultimate

sacrifice for the country, and perhaps the rest of us should not complain too much about making lesser sacrifices, such as merely losing our jobs and our reputations. But it is one thing for a general to order his troops into battle. It is quite another for him to order them to play Russian roulette.

To address the insider espionage threat, DOE should adopt reasonable methods, such as surveillance, improved security of computer systems and possibly even undercover operations. Let's put polygraph

testing where we put cold fusion, pyramid power and astrology, in the trash can that contains discredited and evil ideas.

GENERAL HABIGER: Thank you very much, Mr. Silling.

The next scheduled speaker is Kathleen Gee. Ms. Gee? If she arrives later, we'll ask her to come down. Mr. Stanley Fraley. Mr. Fraley?

MR. FRALEY: Thank you. I am Dr. Stanley Fraley. I am representing myself. The essence of my comment is this: The proposed polygraph screening program, if implemented, will result in damage to individuals and to the United States. The proposed use of the polygraph as a means of screening employees

to detect spies would not increase national security. On the contrary, it threatens national security.

I make this statement from a number of different viewpoints. First, as a scientist, I find no scientific basis supporting the use of the polygraphs as an effective screening tool. And you've heard that discussed at length. Second is my viewpoint as an individual who has taken polygraphs for national security screening purposes. It took me five separate four-hour sessions before my responses were deemed well within the norm.

Prior to that experience, I naively and wrongly believed that I had nothing to hide, I had nothing to fear, and so I shouldn't feel anxious about answering the questions, I should sail right through the polygraph. After the first session, I realized the polygraph is not a lie detector, and it is clearly not a truth detector. The polygraph is a tool for inquisitors to use to try to elicit confessions. It does not provide a reliable indication that you are telling the truth, and further, it cannot detect lies or deceptions.

Regarding the word "deception," unfortunately, there is deception taking place. One deception is that they will only ask four simple

questions. That is not true. A typical session lasts one or more hours. This is so the examiner can discuss each of the questions with you and ask you to elaborate on any reasons why you might have anxiety or concerns about any of the four questions. This inquisition is the real goal of the process and not the time that you spend attached to the machine.

After the questions are asked with you attached to the polygraph, the examiner typically will then have a second informal session with you. This is so that you can explain why you seem to react to the

questions under the polygraph. Take the examiner's word for you, you did react. There must be something that bothers you that you haven't mentioned. In the end, it will be the examiner's subjective judgment as to whether you are being deceptive.

I'm sure that the inquisitors during the Spanish Inquisition believed that their actions were useful and necessary for rooting out heresy. They could point to confessions that justified their actions. The practitioners of polygraphy use similar justifications. However, the major deficiency in the use of polygraphs is not that it is simply an instrument for the inquisition of overwhelmingly

innocent employees. It is that it is not an effective tool for detecting spies. Individuals can be trained to pass the polygraph test even when they are lying. Many individuals do not need training to deceive the polygraph examination. Further, this screening is currently used to accelerate the declearance process in lieu of a more lengthy and thorough background investigation.

As a result, the use of the polygraph procedure as proposed, and even as now practiced, is a threat to our national security. The DOE Notice in the Federal Register states that the DOE is aware of

no scientific studies that establish that polygraphy examination results are unreliable for use as an investigative tool, as the DOE has proposed.

DOE claims to be unaware of such studies. It might be more accurate to characterize the lack of knowledge as clueless. There is a significant body of scientific evidence that addresses this issue directly. Others here at Sandia have noted the 1983 Office of Technology Assessment Report that suggests that there is up to a 50-percent chance of an individual being falsely accused of lying. I personally have drawn heavily from testimony that was given before the U. S. Senate Committee on the

Judiciary on September 29, 1997, by Dr. Drew Richardson, who is a scientist who worked in polygraphy research.

There is scientific evidence that is being ignored. This evidence is also very easy to find. It is especially significant that even DOE does not claim that there are scientific studies that establish that polygraphy examination results are reliable for use as an investigative tool.

General Habiger, you've stated that you wish to restore the special trust of Congress and the American people in the DOE. If DOE proceeds with this

program, then I believe that it will have demonstrated it should not be trusted, by its employees, by Congress or by the American people, either to treat its employees ethically or to protect national security interests.

In closing, I wish to reiterate, the proposed polygraph program does not and cannot tighten up DOE security. It's a facade that represents a clear danger to our national security. Thank you.

GENERAL HABIGER: Thank you, Dr. Fraley. Thanks. Doug Adkins. Good morning.

DR. ADKINS: Good morning. My name is

Dr. Douglas Adkins, and I'm speaking for myself. And first, I wanted to state that I'm here on my own time. I just couldn't justify putting this on any Sandia case number.

And second, after hearing about the phenomenal accuracy of polygraph testing, I decided to voice my support for the test. And I would like to further suggest that polygraphs might have broader application in addressing societal problems. The main problem that should be addressed is the cynicism that the American public holds towards its political leaders. The corrosive effects of this cynicism could be eliminated if every candidate for public office is

expected to take a polygraph test as a normal part of getting elected.

Now I know that engineers and scientists may be skeptical of anything as scientifically suspect as a polygraph test. But fortunately, our political leaders have no such reservations. As representative Wilson so eloquently stated, "Polygraph tests are just another tool that should be available to investigators." Certainly, the voters deserve the same tool in selecting their leaders.

To be fair, the candidates should not be asked life-style questions. But they should be asked

a few policy-related questions. For instance, Have campaign contributions ever influenced the way you legislate? Have you ever used foreign contributions to fund your campaign? Have you ever voted directly or indirectly Social Security surpluses to fund general government expenditures? Have you ever demagogued against reforms that you knew would have been beneficial to society as a whole?

Having the politicians require us to take polygraph tests, we are in a unique position to request that politicians do the same. Let us work together and have New Mexico become the first state where political candidates are routinely asked to take

polygraph tests. Thank you.

GENERAL HABIGER: Next, Glenn Kuswa? Mr. Kuswa?

MR. KUSWA: Good morning.

GENERAL HABIGER: Good morning, sir.

MR. KUSWA: I am Glenn Kuswa, president elect of the New Mexico Academy of Sciences, and I'm also a manager at Sandia National Laboratories, where I've been employed for nearly 30 years, including six years on extended assignments to DOE Headquarters in Washington.

I first wish to present a statement from the New Mexico Academy of Science. It's a very short statement.

"The New Mexico Academy of Sciences believes that there is inadequate scientific basis supporting the efficacy and reliability of polygraph testing. The incidence of false positive outcomes and the resulting harm to individuals make polygraph testing an unfair and inappropriate tool in a free society."

I next wish to present some personal views that suggest some direct harms that will arise from wide use of polygraph testing, and I'd like to mention, if there's time, some alternatives that might improve security.

Polygraph exams seemingly answer frustrations of some political leaders and security professionals because the technique appears to be a scientific means that rapidly detects security risks.

The weakness in polygraph testing is self-evident because of failures to detect proven spies; for example, the Ames case, and because there's a substantial failure rate requiring stressful repeat tests, sometimes without ultimate resolution. The false failure rate is the subject of much discussion and debate which we've had here this morning. It's

really fed by incompletely reported data often shrouded by secrecy, as data from some agencies is not released and sometimes published without the benefit of peer review that's common in most of science.

I will not enter that debate here except to note that polygraph error estimates range from a few percent to 20 percent or more. False polygraph results cause hardship to persons who fail exams. No matter what is said about the way individuals will be continued in employment, their trust, earning capacity and opportunities for service to the nation and promotion are diminished, perhaps for an entire career that might last 30 years or more.

The proposed policy appears to require that

employees take the stress, inconvenience and risks of these unfair and largely unscientific exams with little or no benefit in return, other than to hopefully continue to honor and serve their country.

The DOE system should continue to attract and to hire the best possible candidates. We need the best because we can't afford to be mere caretakers of the complex defense technologies developed in the past. But we have to work on advancements and improvements.

Merely preserving our secrets is an open invitation for our adversaries to overtake us in a matter of a few years, even if our secrets remain protected. Bright people have their pick of jobs and will go where they can most readily apply their talents. Weapons programs mandate publication, reviews and restrict some discussions to a defined need-to-know community. These reasonable rules are followed by our work force, but they are a necessary disincentive when hiring.

Polygraph testing will likely be a much more potent repulsive force in staff hiring.

Now, there was a survey that was done that illustrated that. But let me just show you the Scientific American that came in yesterday's mail,

cover story, two pages about polygraph testing, very negative. And I'll leave this with you as an exhibit.

GENERAL HABIGER: Thank you, sir.

MR. KUSWA: I should add that I saw ads in the Scientific American on Sandia and other DOE labs when I was in high school, and that's one reason I work here today. And if I had seen that, chances are I wouldn't be here today.

An ordinary construction project requires an

environmental impact study to assure the well-being of plants and creatures as low as insects and worms. Protection of the individuals is what this hearing is all about. But it falls far short of studies aimed at lower life forms. Action really should await two studies: One, How will polygraph testing influence hiring and employee retention programs? Such a study must be done in a way that informs participants fairly of risks and the potential benefits and defects associated with polygraph testing, because these facts are not widely known but will surely emerge after a program is put in place. And I think you noticed from the survey down here, there was a wide difference in the responses.

The second study that should be done is that

trusted and unbiased legal and medical experts who would be given free access to statistics kept secret by other agencies that have long used this kind of testing technique should examine the usefulness of polygraphy.

Next point. I question the quality and vision of the program to be set up. We were informed in an introductory briefing by the DOE last week that existing DOE polygraph program has been assessed as

flawless in its procedures during a recent certification audit. And that sounds good on the face of it. But audits aren't the only test of quality.

The head of the testing program stated, There is no plan for training of examiners in the DOE, except to require periodic refreshing courses, and the program is to be operated, quote, by the book and with no room for inventiveness or imagination using vetted examiners from other agencies. A technique as fraught with uncertainties as polygraph testing should not be treated as so routine.

Many of the testers work on contract to the government. This might indicate a shortage of qualified testers and gives little comfort to test subjects. Continued practice that seems to restrict development of new talent could escalate future

costs.

I'm also concerned that one government agency should feel justified in hiring examiners away from other agencies rather than planning together so that they can share resources and provide for future needs for the nation as a whole.

Examples of proven ways to improve security include more sting operations, but they must be conducted within careful ethical practice; random

inspections of employees entering and leaving the workplace; more thorough background investigations instructing all employees to be more cognizant of the signs and traits associated with disloyal actions and so forth. Such activities yield tangible evidence and proof and therefore appear to be more fundamentally fair. The only substantial stress on employees would be on those being examined for a specific reason, and the false accusation rate after investigation would be very small, perhaps even zero. Thank you.

GENERAL HABIGER: Dr. Humphreys, thank you very much. Ladies and gentlemen, this concludes our scheduled speakers.

MR. HUMPHREYS: No, that wasn't Dr. Humphreys. That was (unintelligible.)

GENERAL HABIGER: Who's that? Oh, I'm

sorry. Okay, Dr. Humphreys. Very good. Thank you, sir.

MR. HUMPHREYS: I have yet to get a Ph.D., though, I'm afraid.

GENERAL HABIGER: Pardon me?

MR. HUMPHREYS: I have yet to get a Ph.D., though, I'm afraid.

GENERAL HABIGER: Well, Mr. Humphreys, soon

to be Dr. Humphreys. How's that?

MR. HUMPHREYS: Okay. Well, thank you for this opportunity to be here today. I have several sections of 10 CFR Part 709 that I'd like to address. In particular, Section 709.14, What are the consequences of a refusal to take a polygraph examination?

Paragraph A states that DOE and its contractors may refuse to employ, assign or detail the individual to an identified position.

Paragraph C says that DOE may deny that individual access to the information or involvement in the activities that justified conducting the examination.

Further on, Section 709.23 states that DOE may not administer a polygraph examination unless DOE has obtained voluntary written consent from the

individual.

In my opinion, if an individual feels that he or she must consent to a polygraph examination to hold a new position, compete for a promotion or even to continue working in the same area where they may have built up their professional reputation, can that be called voluntary?

Also agreeing to a polygraph examination to

prevent such negative repercussions as described in 709.14 may also affect a polygraph test's validity. In the OTA report that's been referenced several times here, Office of Technology Assessment wrote, "Conducting polygraphs on this basis could affect test validity. It is generally recognized that for the polygraph test to be accurate, the voluntary cooperation of the individual is important."

For example, NSA has stated conducting screening examinations, quote, The full cooperation of the individual taking the test is essential or the results will be inconclusive, end of quote.

Polygraph only detects physiological arousal. And under involuntary conditions, the arousal response of the examinee may be very difficult or impossible to interpret. That was the OTA's assessment.

The provisions of 709.14 are inconsistent with requirements for polygraph examinations to be voluntary and possibly, even valid.

I recommend that Section 709.14 be changed so that employee applicants and employees who refuse to take a polygraph examination would have their access authorization eligibility determined using

DOE's other investigative tools and techniques.

Present employees who become eligible for polygraph examinations and refuse to take them would continue to keep their present level of access authorization eligibility until a reinvestigation yielded information that warranted their access authorization eligibility to be downgraded or terminated.

Also, Section 709.15. How does DOE use polygraph examination results?

Paragraph C states that DOE will conduct an eligibility evaluation to consider examination results. The individual personnel security file and other pertinent information is part of the eligibility evaluation and process. As part of the eligibility evaluation process, DOE may interview the individual.

As stated in Section 709.25, DOE or its contractors may not take an adverse personal action

against an individual solely on the basis of a polygraph result of deception indicated or no opinion. Unfortunately, the eligibility evaluation described above would, in many cases, bring together information that was already known before the polygraph examination. If action is taken against an individual after the eligibility evaluation, and then

only new information as a result of the polygraph examination, then that process would violate the requirements of Section 709.25.

To better meet those requirements, I recommend that the words "an eligibility evaluation" be replaced with a "full field investigation" or some other equivalent DOE investigative tool.

Section 709.22. What rights to counsel or other representation does an individual have? States that the counsel or representative may not be present during a polygraph examination. I can see no reason why a person should not have one or two representatives there with them during a polygraph evaluation, if they so desire.

I recommend that an individual be allowed to have up to two representatives in the same room during the polygraph examination. It is expected that classified questions will need to be answered, and the

representatives must have the appropriate access authorization. If unexpectedly, classified questions need to be answered and the representatives do not have the appropriate access, then the examination will be halted and the examinee will be given at least 48 hours, subject to exemptions of 709.21, to obtain

representatives with the appropriate access authorizations.

In addition to these above sections, I believe there should be a part in 709 that includes a specific description of the kind of recordkeeping that will take place during the polygraph examination. In particular, the video-recording methodology described earlier today by David Renzelman should be part -- or a similar methodology should be part of 709 to insure, both to DOE and to the examinee, that the examinations are conducted properly. Thank you.

GENERAL HABIGER: Mr. Humphreys, thank you very much.

We have, at this point, two unscheduled speakers. We'll go ahead and ask them to come forward. The first is Ms. Jill Halverson.

MS. HALVERSON: Good morning. My name is Jill Halverson. I am here today on behalf of Senator Jeff Bingaman to provide his comments on DOE's

proposed rule on polygraph examinations. I have a detailed set of comments from Senator Bingaman that have been submitted for the record, and now I would like to briefly summarize them for this public meeting.

Senator Bingaman opposes this rule. Its

proposed use of polygraphs goes far beyond what he sees as legitimate use of this investigative tool. He does not support the proposition that polygraphs should be used as a screening tool by the Department of Energy. His opposition is based on five factors:

The first factor is that the proposed rule's basic premise, that screening polygraphs are effective in detecting guilty individuals, is not supported by scientific evidence. Senator Bingaman believes that the Supreme Court said it best last year when it rejected the use of polygraphs in military court martials. The Court said, quote, There is simply no consensus that polygraph evidence is reliable. To this day, the scientific community remains extremely polarized about the reliability of polygraph techniques, end quote.

The Court also pointed out that, quote, Although the degree of reliability of polygraph evidence may depend on a variety of identifiable

factors, there is simply no way to know in a particular case whether a polygraph examiner's conclusion is accurate, because certain doubts and uncertainties plague even the best polygraph exams, end quote.

The Court's contentions are backed up by the views of knowledgeable scientists and by a comprehensive review by the former Congressional Office of Technical Assessment. And of all polygraph techniques, screening polygraphs have the least scientific support. Thus, DOE's rule is fundamentally flawed from the start.

The proposed rule states that, quote, DOE is aware of no scientific studies that establish that polygraph examination results are unreliable for use as an investigative tool, as DOE has today proposed to use them, end quote. Senator Bingaman believes that this is inaccurate and inappropriate as a basis for rulemaking. DOE bears the burden of proof for producing scientific studies that validates its approach in this rulemaking, particularly since there are ample scientific studies that call the validity of screening polygraphs into question.

It is not appropriate or reasonable in this rulemaking to leave the public ignorant of DOE's

reasons for believing that its proposed rule will be effective, or worse, to take the position that it is up to the public to prove false DOE's seemingly unsupported assertions.

The second reason for Senator Bingaman's

opposition to the rule is that it takes what he believes is an unrealistic view of the problem of false positives. He is concerned that persons who are judged to have failed, in quotes, a polygraph screening, will not be easily cleared, as this would essentially require the person or DOE to prove a negative. In his opinion, this will be particularly difficult to do, judging from the way in which DOE security issues have been treated over the past year.

The third reason for Senator Bingaman's opposition to the proposed rule is that its provisions are unacceptably vague on key issues, such as who would be subject to requirements of the rule. DOE has listed a number of categories of personnel that might be eligible, in quotes, for polygraphs. Without much discussion as to why it believes that such categories present espionage risks, DOE has explicitly postponed to a later date and to an internal process the development of the criteria by which persons in these broad personnel categories would be selected for

polygraph examinations. These criteria should be in the rules so that the public can comment on them.

The fourth reason for Senator Bingaman's opposition is that the proposed rule, in his view,

does not give sufficient consideration to the privacy and other legal issues that will result from DOE's proposed polygraph program. The proposed rule does not adequately protect the rights of innocent parties to counsel at the times when they will need it most in the polygraph process.

DOE has also proposed creating a permanent record system that may contain audio and videotapes of employees sharing private information about themselves, when such material, if not substantially related to counterintelligence, should not be retained.

The final reason for Senator Bingaman's opposition grows out of the preceding four reasons. He believes that the proposed counterintelligence polygraph program will make it much more difficult for DOE laboratories to attract and retain the best and brightest scientific and technical talent. These individuals have many options in today's competitive technology marketplace.

The Chiles Commission characterized the DOE

as being in a war for talent with the private sector. Competing employers will certainly not subject these individuals to polygraph screening, as this practice is forbidden in the private sector by the Employee

Polygraph Protection Act of 1988. The DOE is thus instituting a new test for current and prospective employees that will put its laboratories at even greater competitive disadvantage with the private sector.

DOE's hope that its proposed rule, quote, will be perceived as fair by most potential employees, end quote, is unlikely to be realized if these potential employees research the scientific literature under "Screening Polygraphs" prior to making their decision to accept employment.

Senator Bingaman's basic view is that this rule goes far beyond the use of polygraphs that he would support. As a limited investigative tool, where reasons for suspicion already exist, there is scientific evidence that some polygraph techniques may be valid. But this proposed rule does not confine itself to situations where there is impartial evidence of the validity of polygraphs.

Thus, Senator Bingaman would not support DOE issuing a final rule that substantially resembles this

proposal. If, notwithstanding Senator Bingaman's opposition, the DOE proceeds with this rule, Senator Bingaman recommends that it reconstitute or reconvene

the Chiles Commission to conduct a formal study of the rule's likely impact on the critical human resources needed to insure the safety and reliability of the nuclear weapons stockpile.

He would also recommend that the DOE seek review from the National Academy of Sciences on the weight of scientific evidence establishing the reliability of the types of polygraph screening it plans to implement. Senator Bingaman believes that DOE should complete both studies before proposing a new rule that addresses what he sees as the deficiencies of this proposal and that allows for adequate public comment on its specifics. Thank you.

GENERAL HABIGER: Thank you very much, ma'am. Our next unscheduled speaker is Mr. John Burns. Mr. Burns?

MR. BURNS: I don't have a prepared statement. I would just like to say something from rational perspective regarding computer security. I believe a lot of the hysteria that has evolved came out of the incident in Los Alamos, where it may not have even been a deliberate attempt to commit

espionage, but rather a careless or a disrespectful act regarding computer security.

General Habiger, I've spent a year trying to

obtain funding. And I'm among many engineers that have the perspective that the problems that we face are manageable. However, dollars are spent on worthless pursuits, such as you've heard challenged here today. And I would like to say that, as a taxpayer, I'm disappointed -- I'm speaking for myself -- that we invest so much money trying to manage hysteria.

I would appreciate your attention on the fact that we have a zero-sum game here, and there are very few dollars to go around, and that perhaps you should focus on what could technically be done to solve our problems. Thank you.

GENERAL HABIGER: Thank you very much, sir. Let's go ahead and take a 15-minute break. And Dr. Zelicoff, I'll meet you out front, and we'll get you hooked up with the experts to get your questions answered. The hearing is adjourned for 15 minutes. Thank you.

(Recess held: 11:15 to 11:30 a.m.)

GENERAL HABIGER: Ladies and gentlemen, there -- at this particular point in time, there are

no additional unscheduled speakers. We will be available in the anteroom off the side in the event of

the appearance of unscheduled speakers. And for those of you that would like to just hang here in a standby mode, you're welcome to do that.

As I said, we will reconvene when we get scheduled speakers or unscheduled speakers, and this session will terminate at 1300 hours local.

DR. ZELICOFF: General, in the interest of openness, can you tell us a little bit more about the process, what will happen after we have the text recorded and we submit written questions? Then what happens?

GENERAL HABIGER: What I will do is we will go into recess at this point, and now I can talk to you.

DR. ZELICOFF: Okay.

(Recess held.)

GENERAL HABIGER: Okay. We're reopening the hearing, public hearing, at 1300 hours. There are no unscheduled speakers available for presentations. Therefore, this hearing is adjourned until 1500 hours local; okay?

(Luncheon recess held.)

(Continuation of proceedings: 3:00 p.m.)

GENERAL HABIGER: Good afternoon, ladies and gentlemen. My name is General Gene Habiger, United

States Air Force Retired. We're reconvening the Notice of Proposed Rulemaking. It's 1300 hours, and we'll be -- correction -- 1500 hours, and we'll be in session until 1900 hours tonight.

I'm the Director of the Office of Security and Emergency Operations on behalf of the Department of Energy, and particularly, Secretary Richardson. I'd like to thank each and every one of you for taking the time to participate in this public hearing concerning the proposed polygraph examination program.

Secretary Richardson has personally asked me to be here today to listen carefully to your comments and concerns and to report back to him. Let me assure you, we take this issue very seriously, and also, your concerns are of great interest to us. The purpose of this hearing is for DOE to listen to your comments on the Department's Notice of Proposed Rulemaking. This is a time for us to listen and to understand your concerns. It is not a forum to debate the issues. We are here focused on what you have to say. Your comments are not only appreciated, they are absolutely essential to the rulemaking process.

The Department of Energy proposes

regulations for the use of polygraph examinations for certain DOE and contractor employees, applicants for employment and other individuals assigned or detailed to federal positions at DOE. The proposed regulations describe the categories of individuals who would be eligible for polygraph testing and controls -- and controls for the use of such testing, as well as for the prevention of unwarranted intrusion into the privacy of individuals.

These regulations are being proposed to comply with various executive orders which require the Department to protect classified information. These regulations for the use of polygraph examinations for certain DOE and contractor employees are intended to protect highly sensitive and classified information and materials to which such employees have access.

This rulemaking also proposes conforming changes to regulations governing the Department's Personnel and Security Assurance Program, also known as the PSAP, as well as the Personnel Assurance Program, known to many as the PAP.

If you have not already read the Federal Register Notice from August 18th, 1999, I strongly urge that you do so. Copies are available at the

registration desk out front.

The comments received here today and those submitted during the written comment period, which ends October 4th, will assist the Department in this rulemaking process. All written comments must be received by this date to insure consideration by the Department. The address for sending in comments is Douglas Hinckley, United States Department of Energy, Office of Counterintelligence CN-1, Docket No. CN-RM-99-POLY, 1000 Independence Avenue, Southwest, Washington, D. C., 20585.

In approximately 14 days, a transcript of this hearing will be available for inspection and copying at the Department of Energy's Freedom of Information Reading Room in Washington, D. C. The address is specified in the Federal Register Notice and is also available at the registration desk.

The transcript will also be placed on DOE's internet web site at the following address: home.doe.gov/news/fedreg.htm. In addition, anyone wishing to purchase a copy of this transcript may make their own arrangements with the transcribing reporter seated in front of us here.

This will not be an evidentiary or judicial type of hearing. It will be conducted in accordance

with Section 553 of the Administrative Procedures Act, 5 US Code, Section 553 and Section 501, of DOE Organization Act 42 US Code, Section 7191.

In order to insure that we get as much pertinent information and as many views as possible and to enable everyone to express their views, we will use the following procedures:

Speakers will be called to testify in the order indicated on the agenda. At this particular point, we have no scheduled speakers. We have one unscheduled speaker that has asked to speak. Speakers have been allotted five minutes for the verbal comments. Anyone may make an unscheduled statement after all scheduled speakers have delivered their statements. To do so, please submit your name to the registration desk before the conclusion of the last scheduled speaker. In this case, we don't have any scheduled speakers, so if you want to get on that list, please do so now.

Questions from the speakers will be asked only by members of the DOE panel conducting this hearing. As I said, the purpose of the hearing is to receive your comments and concerns of DOE's Notice of Proposed rulemaking. I urge all speakers to provide us with your comments, opinions and pertinent

information about the proposed rule.

Please remember that the close of the comment period is October 4th, 1999. All written comments received will be available for public inspection at the DOE Freedom of Information Reading Room in Washington D. C. The phone number there is 202-586-3142. If you have -- if you submit written statements, include ten copies of your comments. If you have any questions concerning the submission of written comments, please see Andi Kasarsky, who is at the front registration desk. She can also be reached at (202) 586-3012.

Any persons with any information which he or she believes to be confidential and exempt from law -- from public disclosure should submit to the Washington, D.C. address I just gave you a total of four copies, one complete copy with the confidential material included and three copies without this confidential information.

In accordance with the procedures established in 10 CFR 1004.11, the Department of Energy shall make its own determination as to whether or not the information shall be exempt from public disclosure.

We appreciate the time and effort you've

taken preparing your statements, and are pleased to receive your comments and opinions. I would now like to introduce the other members of the panel. Joining me here today, first on my immediate right, is Bill Hensley, Director of the Office of Security Support with DOE's Office of Defense Program. Bill?

And finally Lise Howe, an attorney with DOE's Office of General Counsel. Lise?

Before we begin to hear your comments, we thought it would be extremely valuable to provide you with a short briefing on polygraphs. We are well aware that there's a lot of confusion and many misconceptions about this issue. Last week, we held in-depth briefings at each of the Labs. This afternoon's briefing provides some of that same material.

I would like to call first Dr. Andrew Ryan, who is the Director of Research for the Department of Defense Polygraph Institute. He will be followed by Mr. David Renzelman, Polygraph Program Manager for the Office of Counterintelligence, Pacific Northwest National Laboratory. Gentlemen.

DR. RYAN: Thank you, General, and thank you ladies and gentlemen, for being here today. Again,

25 I'm Andrew Ryan. I am with the Department of Defense

1 Polygraph Institute. And what I'd like to do is to
2 provide you a real brief education about polygraph and
3 the science called the psychophysiological detection
4 of deception, as we now call it.
5 First off, polygraph is a forensic science.
6 We look at the relationship between physiological
7 measures and the questions or the stimuli being asked
8 by the examiner during an examination process.
9 Currently in the federal community, we have
10 22 federal agencies that have polygraph programs for
11 which we are responsible for teaching and quality
12 control for each of these programs. Within the 22
13 federal agencies, we have 12 that now use the
14 counterintelligence-scope polygraph that DOE is
15 proposing.
16 DoDPI, as I'll call it, DOD Polygraph
17 Institute, is the sole source for education and
18 training and continuing education for all federal
19 examiners in the federal government. DoDPI, in
20 addition to providing the basic course of instruction,
21 also provides the continuing education. We have at
22 least 15 courses, and seems like every week we are
23 developing a new course to deal with personnel
24 security in polygraph information.

Each agency of the 22 agencies that we monitor have their own quality control programs. This simply means that no examiner is going to have the results of a polygraph examination given or turned over to anyone without some type of person going over that, usually a supervisory person. So each agency has their own quality control program, and then DoDPI has a Congressionally mandated mission to also have a quality control program in which we are tasked with investigating and inspecting all of the quality control programs.

So in essence, we have two layers of quality control behind every single administration of an exam, one at the agency level and one at the global level from the Institute itself.

We also have a Federal Examiner's Handbook that is published by DoDPI, and we are ascribing to and trying to get accreditation from many different sources, one which is the American Standards for Testing and Measurement.

A little bit about the school itself. The institute is located at Fort Jackson in Columbia, South Carolina, and all of our students come from the federal community. These are people who have already

attained a baccalaureate degree and are now seeking a post-baccalaureate degree at a graduate level. All of

the course instruction at DoDPI, which is more than 600 classroom hours during the initial training and then a year and a half of internship following that, would be the equivalent of a master's level program.

We have applied, and it appears that everything is in order for us to be given degree-granting authority by the Department of Education in the next year, and we will be awarding a master's degree in forensic psychophysiology. The curriculum that is taught at DoDPI is based on very simply one thing, the research supporting the use of polygraph as a science.

The research and the instructional divisions of DoDPI are a joint mission, if you will. We have a very symbiotic relationship in which we are constantly, in the research division, in the classroom, helping to instruct, and the instructors at DoDPI also act as grant reviewers for us and advisers to us, who are scientists at the Institute.

So we produce the research answers or questions to the research answers, the questions that come from the community, program managers, just like

the DOE has, and then we are tasked with answering these questions and improving the field itself.

Any curriculum modification at the DoDPI is

based on research. So the instructional division would come to us and say, We have a question: We want to know if we're teaching this, and is this the proper way?

Following the research, we would make recommendations for the modifications of any training curriculum, if any. One of the burning issues in polygraph seems to the be the accuracy of polygraph. We have estimates of the accuracy of polygraph ranging from very low numbers to incredibly high numbers, all the way up to 100 percent.

Let's talk a little bit about what accuracy means in polygraph. There are two types of accuracy, obviously, the true positive and the true negative. We want to know if polygraph is able to detect people who are not being entirely candid or who are deceptive during the examination. We also want to be assured that polygraph is able to distinguish, as I said earlier, the relationship between that physiological response and the stimulus, distinguish between the truth-teller and the deceitful person.

We also have a couple of errors, as in all

science, that we are constantly monitoring and trying to stay aware of and make sure that we make these errors as small as possible. One of the errors of

concern, of course, is the false positive. This is when a truthful person is deemed deceptive by the polygraph examination.

We also have a false negative error. This is when we have a deceitful person who is deemed -- deemed truthful by the examination. And I guess it depends on your outlook or your perspective as to which one is the most important error to try and prevent. And all of you know, as scientists, that if you sacrifice one, you are giving up on the other. So as we increase the false positive rate, we are lowering the false negative and vice versa.

Our efforts at DoDPI, of course, are making sure that we have a very low false negative, to try and make sure that people don't slip through the cracks. False positive, you will hear lots about how that is taken care of.

After decades of research on polygraph -- and I'm here to tell you that this is a -- it's an area that is very difficult to research. For one, it is very difficult for us to conduct the type of

research in real-life situations, and it's very difficult for us to conduct the research in the laboratory as well. What we do know is that there's a lot of controversy, like in almost every diagnostic

method or psychometric method or any form of science, whether it be medicine or psychology or any of the others, that we have differing opinions. Some say it is accurate. Some say it is not.

In the laboratory settings, in the analog studies that we do at DoDPI or that we support at DoDPI, we award grants. We are an award-granting institute. We award grants to principal investigators at major universities across the nation. We have strategic partnerships with major universities and labs across the nation, and we seek to help us find our answers. We do not have all the scientists we need at DoDPI, and we need as much help as we can get.

In the laboratory setting, if you can imagine for a minute us trying to establish a scenario of bringing in subjects, many of which may come from the community which we paid subjects, many of which may come from, in our case, the military population, some of which will come from our grant facilities, the student population at a university where they are all

required to participate in the research, the strength of doing laboratory research is we predetermine before the research begins who is going to be guilty and who is going to be truthful. We have what is known as

"ground truth." We program the subject to be either deceitful or not.

On the other hand, the weakness of doing laboratory research is, as you can imagine, trying to pretend to be a spy, trying to pretend to be a criminal. It's very difficult for most honest people to actually do that. So we would set up scenario, mock crimes, mock screenings and ask people to participate in these espionage or crime events, and then the examiners are asked to evaluate their truthfulness.

Now, all this is always done in the blind. Examiners are not given any information about whether our subjects are truthful or deceitful beforehand. On the other hand, we have field studies, those we would love to be able to say we can generalize our results to every population in the world.

Field studies have strengths and weaknesses as well. The strength of a field study, we are working with real-life psychodynamics, we are working

with real-life people who have committed these acts or behaviors, and we know for a fact we are getting the strongest possible physiological response when they are deceptive. The weakness is we have very little ability for knowing actual ground truth. By that, I

mean knowing for a fact. And traditionally, a lot of the history of research, beginning history of research in polygraph was done on the criminal-specific issue, Did you commit the crime?

Unless the criminal actually confesses to a crime on a field study, we are not absolutely 100-percent sure of ground truth, the crime may go unsolved. And so unless we have that ground truth established, it is not -- it is not appropriate for us to report that as an accurate polygraph exam when we don't know the final answer.

Some of the more recent studies that we have conducted or supported at DoDPI trying to look at the screening issues include, we have done and concluded three mock screening studies. This is when we hire and/or recruit subjects from the population to become saboteurs or spies for the crime that we actually ask them to commit. Excluding -- in this study, this first one, an N of 208, if you take the inconclusive results out, then we have, in the guilty subjects, an

accuracy rate of 93 percent. We were able to identify, in the blind study, 98 percent of the people in these screening studies who actually did commit the crime. And in 94 percent of the cases, we were able to identify the people who were being honest about it

who did not commit the crime.

We have one recent field study with an N of 769 conducted by nonfederal examiners. And I emphasize that, because the training of a federal examiner is different from the nonfederal examiner. We in research at DoDPI go to great extents and efforts to make sure that whenever we're supporting research like that, that the examination is as close as it can be to the types of exams, the types of quality done by the federal agents as well. Excluding the inconclusives in this group, 72 percent of the people who were programmed to be deceptive were identified, and 87 percent of the honest subjects were identified.

Again, as you see in most research, the difference between lab studies and field studies is sometimes significant.

Most recently, in 1998, DOD -- and this is not considered a research study, although in the

research division of the Institute, we consider all real-life issues as being research data for us -- in the past year in the DOD, we screened 7461 subjects. This is a result of that screening. And I'd like you to take a little bit of time with this and go over some of the issues here, because I think it's very

informative about what actually takes place in a counterintelligence-scope polygraph program very similar to what the DOE is proposing.

Number one, probably the most important thing up there is no one in the DOD refused to take the exam. We had 0 of 7461 not refusing. The next thing that you see, 7334, or 98.3 percent of the subjects tested, were deemed immediately, by the first exam, as being truthful. That means no significant response, no deception indicated, however you would like to term that. We basically found out there was nothing to look at and nothing to be concerned about there.

The next row, you see significant response deceptive with admissions and then nonsignificant response later. Let me hold that just for a minute. 110 subjects out of the 7400. The next line, no opinion. Every now and then, as we know, sometimes a test doesn't work, sometimes we have to go back and

have EKGs rerun, EEGs rerun. We have to have all kinds of tests rerun to make sure. Sometimes, even polygraph, we come out with a "no decision made" because the data is not there for us to make a call.

We did have four subjects who there was a significant response to one of the items that you'll

hear about momentarily that we would call deceptive, and they did not admit to doing anything. So basically, what we had was a polygraph examination saying, There's something here that you're not being completely candid about, and they would not and never did admit that there was any reason for that response.

There were 11 subjects that we also found a significant response -- we're calling it deceptive -- that made admissions following the test, and then, when asked, Can you help us in understanding this, they continued -- and this is a retesting -- they continued to have a significant response.

Let me, if I can, go back up to the 110. This would be the false positive group, for most people, the people that were identified as deceptive but are truthful. Of the 110 -- or 1.5, which seems to be correlated with that number that floats around

saying we have about a 2-percent false positive rate -- those people were then asked after the examination, Is there any reason, can you help us to explain your response to this particular item?

After discussing that with the federal examiner and then being retested, we found them to be truthful. It simply means that we were unable to put

them into the group of the truthful subjects with the other 98.3 percent. So as you can see, the real false positive rate depends on when you're asking that data to be assessed.

The bottom line of polygraph, as we know it today, is that one in every 480 exams administered by federal examiners will come out with a false positive rate. A few of these employees will be reexamined. They will be tested again, and you will hear more about the Department of Energy's process as we do have some variation between agencies.

False negative rate, which in the Institute, we are certainly concerned about that, and I know you are, too, because each and every one of us are concerned about our national security, the one that slips between the cracks. Here again, we are looking at an issue that is very hard to resolve. If we call someone innocent, if we say they are nondeceptive, we

don't know ground truth.

The fact of the matter is we don't know when we say that. It takes usually some follow-up investigation or some additional information later to find out and to prevent the false negatives. So that's why I suggest that we will try to lower the false negative in a polygraph exam and sacrifice the

false positive, because we know we can follow up on the false positive.

Speak to you a minute about foreign polygraph use. For a long time, it was thought the polygraph was an American technology. It is not just an American technology now. Although created or started in America, we now know that it is being used across the world. We know there are 68 countries now with polygraph capabilities. I believe that's one in every three countries, friendly and unfriendly.

We do know that, in order to keep up with the United States, these other governments have gone into polygraph programs. An increasing number of intelligence and counterintelligence services are being offered -- are being started up across the world.

And our biggest reason for, I guess, trying

to keep the polygraph program as it is is that we know from evidence, from spies being caught and spies not being caught, that there are measures that people can use to defeat the polygraph process. We call that countermeasures.

Countermeasures are any effort made to defeat the polygraph exam. They can be anything from simple biofeedback techniques that have been taught as

relaxation methods by psychologists for years to some types of pharmaceutical interventions and other physical measures. These, for the most part, are public information. They're on internet web pages. Doug Williams has a page. They are offered to train people in the countermeasure process to defeat the polygraph process and/or the examiner.

We are constantly researching countermeasures, as DoDPI, and what we do right now is, it is very difficult, once we are aware of the countermeasures, to defeat the process. And for that, I mean, the federal examiners at DoDPI are also being taught to encounter countermeasures, to detect the countermeasure when it's being used and then to assess the outcome of the evaluation with that knowledge.

We all are familiar with the Ames case of the CIA, where it was said that Ames actually beat the

polygraph. What we do know is that he was taught countermeasures by the Soviet Union. We now know the Soviet countermeasures, and we have counter-countermeasures for that. London & Krapohl published in 1999, one subject was taught polygraph countermeasures by the Doug Williams organization and was unable to defeat the polygraph, attesting to the training at DoDPI, that we are defeating them as we

recognize them. Thank you.

MR. RENZELMAN: Good afternoon. My name is David Renzelman. I am a contract employee with the Pacific Northwest National Laboratory. I am on detail, on assignment and direct report to the Director of Counterintelligence in the Forestal Building, and I work for Edward J. Curran, who is the Director of the Counterintelligence Program. I run the DOE Polygraph Program from a quality control standpoint and a management standpoint. Nobody at the Pacific Northwest National Laboratory or anybody but General Habiger, when I worked for him, or Ed Curran, when I work for him, gets to direct the activities that I do or see the reports that we generate as a result of polygraph testing in DOE.

We heard the name forensic

psychophysiological detection of deception. And that's what the scientific community has labelled what used to be known as lie detection. It evolved from that to polygraph to PDD. The press oftentimes refers to it as lie detector. We in DOE choose to still call it, and it's in our regulations as "polygraph" because that's the most familiar to most people.

What is polygraph? I'd like to tell you that it's only a means and a mechanism that we can see

on paper externally how someone is emotionally feeling internally during a specific period of time when a question that has been agreed upon between the examiner and the person taking the exam is asked that question. When they answer that question, they listen to it, think about it, answer it. Any emotions that are experienced during that process is recorded via means of a computerized instrument and printed out on paper.

And we're looking at three parameters of physiology, respiration, electrodermal activity, which is nothing more than sweat-gland activity, and cardiovascular activity. How fast is the pulse beating, the heart beating on a mean level and your blood pressure on a mean level. We're looking for variations from an established norm that you have

provided during that specific period of time.

If your answer to a question pertaining to espionage, sabotage, unauthorized disclosure or unauthorized contact with a foreign intelligence service bothers you, then, of course, it's going to bother the DOE. We would like to know, Why does it bother you? And that's what polygraph is all about.

It's controlled by the person taking the examination. The question is agreed upon by --

between the examiner and the person taking the exam, and the questions are simple. There are four of them in this security arena.

And one of them is, Have you ever committed espionage against the United States? Well, I'm here to tell you you don't wake up one morning and become a spy. That's a conscious act that you've decided to do an overt act to accomplish. And what we do in preparation for really an eight-minute test is take about an hour or however long it takes to prepare you to answer that question during the testing process.

I'd like to relate to you what happened when I was doing the first exams at the National Reconnaissance Office back in the 1980s. And we were testing at TRW in El Segundo, California. And we had

some 47 people in the audience. And I gave each one of them a piece of paper and asked them to write down their definition of espionage.

One person, a female captain in the Air Force, had written down, Yes, I have committed espionage, but I only did it twice. I was on travel both times, and I ultimately told my husband, and we're going to marriage counseling now, and I promised him I'll never do it again.

And had we not explained to her what

espionage really meant, her answer to that question would have really troubled her. And if we had not taken the time to do it, we could have had some difficulty in the analysis of that particular test.

And that's why, when you come, should you be tasked or asked and volunteer to take a counterintelligence test for DOE, no test will begin before you're ready to take the test. We need to make sure that you understand what espionage is and what it isn't, and we want to make sure that you didn't do it and that your answer to that question, when you deny it -- and we expect the answer to be "No." If it happens to be "Yes," we'd certainly like to talk about it before the test. But if it is "No," we want to make that clear and understood and make sure that the

question does not trouble you right up to the point that we ask the question on the test.

Sabotage and terrorism, stands to reason. Look at the act of terrorism that took place last night in a church. Look what happens in postal buildings and other buildings and embassies around the world. So DOE is concerned that the people who do the kind of work that we're targeting having to do with nuclear weapons -- and we're the only agency that's building them -- that they have not engaged in areas

of sabotage or terrorist activity. So the question would be, Have you ever committed sabotage or terrorism against the United States? And again, either you did or you didn't.

Then we're going to talk about unauthorized disclosure and illegal unauthorized disclosure to commit an act of espionage. Not an inadvertent disclosure to a friend, a significant other or a neighbor. That's really two things, not terribly intelligent and perhaps a security infraction. But that's not what we're in the business for. General Habiger and my boss, Ed Curran, has mandated we are looking for people who have illegally disclosed classified information in an effort to commit

espionage against the United States.

And lastly, a question would be if you've had unauthorized and unreported contact with a foreign intelligence service or agency. We're not talking about somebody you met on a trip somewhere, be it exotic or otherwise. We're talking about people who represent a foreign hostile government.

The data from that test -- and let me explain how that goes. Let's suppose we ask the question, and we see though significant responses in the parameters that I just described, then one would

tend to think that perhaps you're telling the truth. And then we have diagnostic questions we would like to ask you, whereon you can display that you have the capability of providing physiological responses if you would lie. And that's called a directed lie.

And we're going to ask you something very simple, like, most people drive an automobile. We would perhaps ask you, Do you drive a car? And if the person responds Yes, I drive a car, most people I know, at one time or other in their life, have violated the traffic law. Could I then presume that you have? And most people would say, Yes.

And I would ask if they could recall an instance where they had violated a traffic law. And

if they can simply to acknowledge it and not tell me anything about it. If they could, I would then ask them, During the polygraph test, I would like to ask you that question as a diagnostic question during that test. But I don't want you to tell me anything about it. I want you to think about it. I want you to see it. I want you to visualize it. And then I want you to lie to me and tell me you did not do that.

So what have I done? I've focused your psychological set on that thing that causes you the most concentration at the moment. Remember that. You

don't have to remember the truth. It comes automatically. Did you commit espionage? Did you ever commit a traffic violation? I just told you to think about it, wanted you to visualize it, wanted you to think about it, and I wanted you to lie about it. Emotionally, your autonomic nervous system will provide data that is so minute you won't feel it, but it will be recorded on paper by a computer, printed out so it can be analyzed. And so if you don't show responses on the security test but do on the diagnostic, that part of the test is open.

Suppose it's the other way around. Most people would have some difficulty with the question

about the unauthorized disclosure. I explain that, I talked that out -- we're not there -- they even gave it a name. We call it "pillow talk." That's not what counterintelligence is all about. That's two things, an infraction and something that shouldn't have been done.

The data is examined by an examiner. As Dr. Ryan indicated, all federal agencies have quality control. DOE has the strictest quality control in the federal government. We require that if a test is administered, that a second examiner in the blind evaluate your test to determine that the data is seen

the same way by no less than two people.

At that point in time, one would think it would be over, according to the standards established by DoDPI. We go then to a supervisory level, which is three levels, now, of interpreting your test data. It doesn't stop there. Then it goes to my office, which is the Office of Quality Control, where I or my staff will evaluate that test in the blind, compare our results with each of the three previous blind data analysis.

We all have to see the same thing, because if one person saw this and another person saw that, somebody's wrong. And we're not going to take a

chance, because this is your test, and it's important to you, it's important to the DOE and it's important to us.

Then when it goes through the quality-control process, it's reviewed because it's been recorded on videotape. When I say "videotape," it is audio and video together. We take the data from the computer, and by means of a TV transponder, insert it into an 8-millimeter videotape, where we can see outside the room the emotional responses you're providing during the testing process, real-time, with a camera right on you, so we can correlate that to

determine if the responses are natural, if they were intentionally inflicted, such as in countermeasures, or if we need to do anything and scrutinize that test any further.

And the Director of Counterintelligence takes the results of this test, he's the only one that gets to see it, or General Habiger, if it's directed from his office and responsibility within the Department, and then they determine what happens with that.

Nonissue testing, which is the greater majority of the DOE tests, are going to be "Require no

action." It's a matter of the entry into the computer that this person has taken it and has successfully completed the polygraph testing process.

Now, I told you about recording all of these examinations. The videotape of all nonissue examinations is destroyed at a prescribed period of time. We have established every 90 days, we take the examinations during the past 90 days and incinerate them. We do that because we don't want to take a chance of using electronic erasure or taking a hammer and beating on them. We want to beat them up in a prescribed manner because of environmental concerns.

We do use the recordings for quality

assurance review. Let's suppose that you want to admit some wrongdoing of significant interest that warrants further investigation. That, then, is a permanent recording of what transpired in that room. What am I talking about? We had a guy who was Q-cleared long ago. And when he was, he had access to what they call a map, a strategic location of all the nuclear warheads throughout the United States.

And he had met this person who happened to be the First Secretary at the Russian Embassy in Washington, D. C., at a party, who asked him could he get it. And he did, and he took it right into the

Russian Embassy and gave it to him. When he took his test, and we asked him about unauthorized disclosure, he had great difficulty in denying that. When we questioned him, he told us, You know what? Maybe when I did that, that could have been what I was thinking about when you asked if I was disclosing classified information to unclassified people.

We said, Yeah, you're right. The videotape went to the FBI for investigation. What happened to that, I don't have any idea, because the FBI doesn't routinely come back and tell the referring agency what they did. That would be the only thing. The greatest majority of them, the track record real-life

experiences has shown in DOD, out of 761 tests, 98-point-something percent of them were nonissue tests. We destroy them after 90 days. We don't keep them. If you happen to tell us something of an insignificant nature that could be of interest to a contest in a divorce court or something, it is not releasable to the opposing attorneys.

We only administer DoDPI sponsored procedures. We adhere to all of their policies and regulations. We are submitted to the quality assurance inspection, just like Dr. Ryan told you.

And last year, we had our inspection, and we were the only federal agency that had zero findings. They found nothing wrong with the DOE polygraph program.

I am very proud of that. I think there's a reason for that, because I served as Chief of Instruction and Acting Deputy Director of that Institute from 1986 to 1991. And I believe that we don't have room in DOE to be innovative or inventive. We follow established and accepted practices that are put out by DoDPI.

Now, the Secretary of Energy has told me, Ed Curran has told me, General Habiger has told me, and I now understand, that no adverse action can be taken against any person just based on a response, a

physiological -- a significant physiological response to a security question. Every effort has to be taken to resolve that.

We first begin with polygraph. If that doesn't work, we'll do everything we can to determine what was it that troubled you when you answered that question. Does that happen? Hasn't happened to me yet in DOE. I started the program in DOE in '91, and we've done some 600 of these tests, and we were very small, accelerated access authorization program, a lot of people coming from other agencies.

I've not experienced that. For every time that we had a significant response, folks have given us a reason why that response was recorded. Will it happen in the future? I don't know the answer to that. But if it does, we're prepared, and we'll take every effort to treat you with dignity and respect and make every effort through every means available to us to resolve that issue.

At that point in time, someone in the adjudication process makes a decision. But nobody arbitrarily would take action just based on the results of a polygraph test against you. But for you, they take the word carte blanche and put it in there that you have successfully completed the polygraph

testing process. So it's for you, not against you.

All of our people are graduates of DoDPI, either the basic and advanced. All of our people have advanced degrees or studies in related disciplines or are required to get a graduate degree within a specified period of time. All of our people have proven counterintelligence experience. We don't take examiners from college graduates and send them through school and teach them how to do polygraph on you.

Bottom line is, if I wouldn't let them test

me if my future depended on it, they're not going to test anybody in DOD. All of our guys have an 1811 job series rating in Civil Service, which is criminal investigator or DOD experience. They have to be certified by DoDPI.

And it's an extensive certification process. We have to have the certificate signed by the Director. We do the same thing at DOE, and our requirements are higher than any other federal agency. I do require both, full membership in the American Polygraph Association and the American Association of Police Polygraphers. Our folks hold elected office in both of them.

I served as the Director of Quality Control and the Director of Region I for the American

Association of Police Polygraphers, and I serve as the Subcommittee Chairman for Quality control for the American Polygraph Association. And I think that adds to our credibility.

One of our examiners is the President of AAPP, and one of our examiners is the Chairman of the Ethics Committee for the American Polygraph Association. We've been inspected by both of those associations, the DoDPI, the Air Force Office of Special Investigations, their counterintelligence

unit, and the National Reconnaissance office.

There are two people in DOE that have responsibility to affect how and when and who the polygraph examination will affect. One of them is seated and is the chairman of this rulemaking committee, General Habiger. The second one is Edward J. Curran, the Director of Counterintelligence. The General had been in charge of the Strategic Air Command for the whole United States, and Ed Curran had been an Assistant Director of the FBI. They had sent him over to the CIA to head up their investigation in the post-Ames era and get a program that was functional.

Upon completion of that, he was sent over to DOE to be the Director of Counterintelligence. I

can't imagine any two more qualified people to insure the job is done correctly. I take my direction from nobody but the General and Mr. Curran. And that concludes my presentation.

GENERAL HABIGER: Thank you very much, Dave. Andy, appreciate it very much.

This introduction has been a bit lengthy, but necessary. Now, it's time to move on to the reason why we're here, and that's to listen to you. I

don't know if we have our first unscheduled speaker here.

MS. KASARSKY: No, he hasn't come.

GENERAL HABIGER: Okay. We will remain in session for another --

MS. KASARSKY: General, we have another unscheduled speaker.

GENERAL HABIGER: Okay. Dr. Zelicoff has asked to revisit. And sir, you are perfectly within your prerogative, and we welcome you back to the podium.

DR. ZELICOFF: Thank you, General. In the interest of being responsive to your request earlier this morning, as well as providing exceptional service in the national interest, I'd like to read into the record the unanswered questions from the technical

meeting. That's the term that was used by Mr. Renzelman and Dr. Ballard (sic) of 9/7/99.

And the reason for reading this into the record is not merely getting it into the record, but to ask Mr. Renzelman and, in this case, Dr. Ryan, if there are any ambiguities in my questions, because as I understand the rules that you have laid down, General, there will be no debate or exchange.

And I also understand from Ms. Howe that any

kind of response that we get back will be subject to only very limited discussion. So this is my only opportunity to make certain these questions are clear and unambiguous. Hopefully, it's as clear and unambiguous as you claim polygraphy to be.

First question is, What happened to the 15 people who had significant responses -- I believe it was a total of 4 plus 11 -- in the DOD polygraph study to which you referred, Mr. Ryan?

Second, Dr. Barland's stated that there were no medications that have any effect on the utility of polygraphy, and he claimed to have a reference. I'd like to know what that reference is. I've been unable to find such a reference after looking through Science Citation Index, which includes 15 million review articles. There is not a single article that has both

polygraphy and drug effects either in the abstract title or full text.

Third, Has the DOD polygraph study been published in any scientifically reviewed journal, and if so, please name the studies and publication?

Fourth, If there's no gold standard for true positives or true negatives, or perhaps both, how is it possible to calculate Bayesian diagnosticity; in

other words, how do you use that to determine the utility of polygraphy if you don't know those fundamental facts?

Fifth, Assuming that the DOD data is correct, what, in fact, is the Bayesian diagnosticity in polygraphy? Will you calculate it for me? And if I may ask you to be a bit flexible, if you assume the false positive is 10 percent instead of 2 percent, or .2 percent, please calculate the Bayesian diagnosticity under a false-positive rate of 10 percent.

Six, I'd like to know the changes in electrodermal response as a function of the disease state; that is to say, how advanced the disease is or progression of disease for the diseases that I have listed. And I've listed these not because they are complete, but rather because I think they are

representative of the community here. They are certainly age-related diseases that affect those of us who have very little hair or gray hair, diabetes, congestive heart failure, hypertension and asthma.

And then because of the DOE's policy of inclusiveness of all groups and no discrimination against any group, as the Secretary stated when he was here about four weeks ago, I'd like to know your

understanding of -- of electrodermal response in people who are HIV-positive; not people with AIDS, not people on drug therapy. I'm making this very simple. Just people who are HIV-positive.

And then finally, and perhaps most importantly, Dr. Barland claimed that there was no evidence that there were any commonly used drugs that had an effect on polygraphy. That was Question 2. But specifically, I would like to know if beta blockers, ACE inhibitors, antianxiety drugs, antidepressants -- you can pick one from each of those -- calcium-channel blockers and anticonvulsants have any effect on the signal-to-noise ratio for polygraphy.

I think those are fair questions in light of Mr. Ryan's presentation. And with all due respect, Mr. Ryan, I simply wanted to point out, Mr. Ryan,

perhaps to save you a lot of trouble when you visit other technical audiences, to not point out the obvious, which is that true-positive rate plus false-positive rate equals 100. We all know that. Therefore, they're inversely related mathematically.

The issue here is how the true-positive rate changes as a function not of the false-positive rate,

but of the false-negative rate. That is, as you tune down or tune up the ability of the test to detect a cheater, liar or deceptor, how does the true-positive rate change? That's a completely different question from the mathematically obvious one you answered, which is the true positive and false positive are inversely related.

And then finally, I would urge you not to point out a "case of one" in evaluating the utility of your ability to detect deception. There's an old saw in medicine that goes like this: If you see one case of a rare disorder, you're allowed to say, In my experience. If you see two cases, you're allowed to say, In my series. In three cases, you can say, In case after case after case.

Well, it doesn't really help to have an N of 1, because while that may be your experience, it has a standard deviation of infinity.

So I would urge you when you're mentioning data to technical audiences, you try to stick to the technical facts and also address the technically significant questions; in this case, the function of true positive -- excuse me -- the effect of false negatives on true positives, not the effect of true positives on false positives, because we know they sum

to one. Thank you, General.

GENERAL HABIGER: Thank you very much, Dr. Zelicoff. We appreciate your input. Do we have any other unscheduled speakers? Well, ladies and gentlemen, we will temporarily adjourn these proceedings until we have our next speaker who will request their comments be known. Until then, we will adjourn this session. Thank you.

(Recess held: 3:45 to 6:55 p.m.)

GENERAL HABIGER: Well, let the record reflect that the -- the panel has reconvened at 1853, and we have one additional unscheduled speaker, Dr. Al Zelicoff. And Dr. Zelicoff, thank you for coming back, and we look forward to your comments. Go ahead, sir.

DR. ZELICOFF: Thank you, General. And thank you for your indulgence in letting me speak yet another time.

General, in government and academia, even at the National Laboratories, it's common practice to reflect on an event and summarize the lessons learned during the course of that event. Usually, this exercise is carried out after a period of reflection, some sober thought or perhaps a few not-so-sober

moments with colleagues. But regrettably, we at the DOE Laboratories will not have this luxury as you've already stated there will be no debate. And Ms. Lowe has indicated in an off-the-record conversation that even she, the lawyer for the panel, no less --

GENERAL HABIGER: Let me say some -- if you say that, "Off the record," if you read it, it becomes part of the record. I have to respect Ms. Lowe's comment to you off the record.

DR. ZELICOFF: That's fine, General. I would appreciate it if you wouldn't interrupt me. If you want to take notes and ask me about any points, I think that would be the way we should conduct business.

GENERAL HABIGER: I would disagree with you, sir. I am kind of in charge, as the panel chairman. And within the dicta -- dictates of the authority vested in me, I'll handle these proceedings as I see fit, with Counsel.

DR. ZELICOFF: Very good.

GENERAL HABIGER: Do you have any problems with it?

DR. ZELICOFF: I have no other references to any off-the-record remarks. So I hope that that will somewhat assuage your concerns.

GENERAL HABIGER: Thank you.

DR. ZELICOFF: In any case, it's not certain what rule changes, if any, would mandate a rehearing to discuss the results of this process. And it would be far below the standards of professional scientific conduct if I did not comment on the disingenuousness of this approach.

General Habiger has stated that the rules no longer permit debate on the scientific merit of polygraphy. Yet you're ostensibly here to listen to the scientists from the premiere laboratories in U. S. government, scientists who have prepared careful reviews of the scientific literature on polygraphy and who have raised legitimate and, so far, unanswered questions regarding the arbitrariness of the exam, particularly as it relates to people with medical problems, people on medications or who may otherwise be very different from the populations upon which you base the uncritically reviewed conclusions about the

utility, veracity and robustness of the test from the DOD study.

You appear to be perfectly prepared to dismiss all of this work. Thus, in my view, this is not a hearing. This is not even a listening tour, as

you have forestalled reasoned debate, and it is not clear when we will receive any answers to any of our questions. Based on the nonresponsiveness of Dr. Barland and Mr. Renzelman during and after the technical briefing of the 9th of September, I am skeptical that you will make a good-faith effort to address the concerns that we've expressed, nor do I believe you will respond to follow-up questions should your answers prove to be as incomplete as the technical briefings provided today.

So what have I learned? I've learned that the postgraduate study at the postgraduate Polygraph Institute does not include instruction in the principles of the scientific method. Nor does it imbue in its students the responsibility to carry out research subject to the review of scientific colleagues and publication in scientific journals.

I have learned that even for educated people and a four-star general with the rank of "Czar," which is a somewhat odd notion in our pluralistic society,

that the need to do something overwhelms the need to do something useful, data be damned.

I've learned that for this panel the search for truth appears to be not nearly as important as producing sound bites for the media.

In short, I've learned that the metrics of accuracy, reliability, safety and security that you demand of us, your employees at the National Laboratories, you appear not to demand of yourselves. Leaders should set the standard. In my opinion, you have failed.

Now, what is my empirical evidence for these conclusions? First, let me address the technical items. And I'll be speaking directly to Dr. Ryan and Dr. -- and Mr. Renzelman. Dr. Ryan, and Dr. Barland before him, spoke to this and other audiences of scientists and engineers with the following statements:

That the autonomic nervous system response is, for all intents and purposes, a one-to-one mapping for deception.

Any freshman medical student knows that there are dozens, if not hundreds, of reasons for autonomic nervous system changes in stressful conditions. Your assertion, Mr. Renzelman, that, I

know from my experience, unquote, of the utility of this test in detecting deception, is simply sophistry. And we in the science and engineering laboratories will not let you be so dismissive when you use this

information to judge people, their careers, their reputations and their devotion to national security.

We've been told that false positives and true positives are inversely related, which I've already pointed out is a tautology that requires no need of explanation, but we are given absolutely no data on the receiver-operator curve of sensitivity versus specificity of your test. This is heresy in the technical community. And in the nuclear weapons community, it is a violation of safety and security of the highest order.

We've been told that there are no medications that affect the signal-to-noise ratio of polygraph tests. Yet you ask polygraph subjects for a list of their medications so that you can somehow factor this information into your interpretation of the test results. This is symptomatic of subjective post-hoc-ery of the worst kind, and we in the technical community would be dismissed for such malfeasance.

We've been told that you are confident of

your ability to detect attempts to subvert polygraphy based on one case, one case of an individual allegedly trained to fool the polygrapher. Sorry, Mr. Ryan, but I expect someone who is the director of research at an

institute to know that this data is statistically meaningless and that your assertion of its import is as clear of an example of a lie from a scientist as anything I've ever heard.

In short, the presentations that you have made today and at the technical briefings are an insult to this scientific community or to any group of scientists. Your credibility, which did not begin on a high plane to start with, was further undermined by your poor science and your preference to tell folksy anecdotes. Sorry, but you're going to have to do a little bit better than this.

Next, let me review the empirical evidence of a political nature. General Habiger stated, "I don't understand why the people who are entrusted with nuclear weapons would object to answering four simple questions."

General, I understand that while serving under the most ethical administration in history, you labor under the murkiness of Presidential confusion as to the definition of what the word "is" is and the

sudden classification of direct lies uttered on national television as to mere, quote, misleading statements. It must be challenging to set new ethical

standards under such conditions. But we're all adults here, General, so let's get real.

Isn't it just possible that your statement about four simple little questions was a little incomplete and perhaps misleading to the media and to the public? Do you not wonder why people doubt your sincerity of purpose during your listening tour when you fail to note that polygraphs take at least an hour, and that is it is not unusual for them to go on as long as four hours?

I don't expect that the ability to evaluate simple statistics is a requirement to get four stars. After all, that would require doing long division. But until today, I had assumed that integrity was one necessary box to check. And my colleagues and I, I guess, will have to reexamine that assumption.

Further, if the evidence examined by Sandia scientists today does not make the case for at least a reexamination of the utility of polygraphs used in a screening mode, then nothing will convince you. You can not make chicken salad out of chicken feathers, General.

Until today, I had also assumed that keen judgment, healthy skepticism and the ability to question so obvious a group of self-interested

technology peddlars was another requirement to get a star. This is another assumption, I guess, that I will also have to reexamine.

In short, it is my view and, I believe, the view of others that you have used this opportunity of a public hearing to politicize a critically important issue. And while you may have listened, there is no evidence that I can see that you have heard. I fear that in your zeal to show firm decisiveness, you have capitulated to flimsy demagoguery. Instead of intellect, you have given us only attitude. In my view, this is the worst kind of arrogance.

But let me end on a positive note. With the inspiring vote of "no confidence" today from Senator Bingaman, this matter has suddenly been lifted out of obscurity into grist for inside-the-Beltway debate. The Senator, I think, has probably done himself short-term harm with his colleagues on the Hill and maybe even in the White House. I, for one, admire him for it.

As I've had some modest contact with his staff over the last few weeks over the issue of

polygraphy, I believe he has become energized by the sheer intellectual emptiness of this rulemaking

process and the panel's arrogant dismissal of all contrary scientific evidence and its willingness to sacrifice national security on the political altar.

So I guess I should be grateful to you for at least that much. The Senator's insistence on a well-balanced review process, sound science, and, if necessary, rejection of a very bad idea is the stuff that makes this country a great place.

The debate is not over, General. The debate has only begun. You've guaranteed it.

I'll give a copy of my statement to the stenographer, and I thank you for your indulgence.

GENERAL HABIGER: Thank you very much, Dr. Zelicoff. And let the record delete the off-the-record comments. Let the record also correct the title of "Dr." Ryan instead of "Mr." Ryan; okay? Do we have any other unscheduled speakers? The -- this hearing is hereby adjourned at 1904 hours. I thank you very much.

(Proceedings concluded at 7:04 p.m.)

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

REPORTER'S CERTIFICATE

I, Cynthia C. Chapman, New Mexico Certified Shorthand Reporter, DO HEREBY CERTIFY that I did report in stenographic shorthand the proceedings set forth herein, and the foregoing is a true and correct transcription of the proceedings had.

I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or participants in this case, and that I have no interest whatsoever in the final disposition of this matter in any court.

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