BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

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IN THE MATTER OF: Docket Number:
RELIABILITY READINESS : PL04-13-000
REVIEW PROCESS :
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Hearing Room 2C
Federal Energy Regulatory
Commission
888 First Street, N.E.
Washington, D.C.

Wednesday, September 29, 2004

The above-entitled matter came on for technical
conference, pursuant to notice, at 9:15 a.m., Joseph
McClelland, presiding.
CHAIRMAN WOOD: This open meeting of the Federal Energy Regulatory Commission will come to order to consider our reliability review technical conference posted for this time and place.

I'd like to welcome you all here and thank you all for taking time out of your busy schedules to come down here today. This is a followon to a conference we have today with our counterparts from Canada.

I would like to recognize that Kim Kucey from the National Energy Board, is actually also a multi-tasker today. He's on our first panel, but he's also representing the Canadian Government interest in overseeing the NERC issues that we're talking about today.

One of the items that, after the blackout, that Michael Gent and the NERC Board decided to do, right off the bat, was to engage in a series of readiness audits or readiness reviews of the different operators in the North American energy market, to really assess, not in a formal audit, per se, but to really assess the state of readiness of the various parts of the country for the type of issues, not only that showed up in the context of the blackout last year, but, in general, just a general kind of readiness to perform the kind of business that's necessary to keep the
lights on.

As a result of that, FERC Staff was invited to participate in those audits, which we gladly did and have continued to do. We took a break in mid-Summer, and, at the end of June, NERC held a workshop with the different folks that were working on these things, and made some assessments, which we'll hear about today.

Our Staff was there as well and shared some of their thoughts with me, which I've commemorated in a letter at the end of July to Mr. Gent, CEO of NERC, and invited NERC to participate in today's conference. They gratefully accepted and we're glad to have them here participating on all of the panels today.

In addition to them, we have a number of participants from the marketplace, and that's what we'll start off with in our panel here today, to talk about the audit process.

One thing that I hope will come out of today's meeting is a followon to Recommendation No. 18 of the Blackout Report that came out earlier this year. It did talk about the importance of supporting and strengthening the NERC Reliability and Readiness Audit Program.

I think this should be viewed as both support and exploration of what remains needed to strengthen this program. I personally think it's the singlemost significant
thing to have come out of the blackout followup that the industry has engaged in, and I think it has promise to really be the heart of readiness for our entire continent's future.

With or without legislation, this is an extremely important step. I want to say that I'm personally committed to making sure that gets better, that it continues to be a fixture on the scene, and that we continue to use as much of the resources of our Agency to support this effort, as we can.

I think it's important that it move to a different level. I think we're going to talk about that today. Again, I think I speak for all of us. We'd certainly like to see the Congress enact the energy bill that includes the reliability legislation.

That would certainly, I think, provide some clarity as to the importance, in fact, the mandatory nature of complying with these rules. I think we've found here that most entities are doing a good job, but certainly a mandatory regime here on something this critical to our continent's economy, is something that is long overdue. So, it's our hope that we get that as soon as possible, and we honestly wish that it would be already in place, so that we could be working in that new role.

But we do the best with what we've got. I would
just like to start off by saying that I think this particular effort we're focusing on today, is the hallmark of what has happened in the last year in response to the blackout that has made this continent's electricity grid much more reliable, much more efficient, and a lot better to serve the customers of our two countries.

I would like to introduce and turn it over to Joe McClelland. Joe is head of our Reliability Division, which was created in response to an increase in the Commission's budget last year by the Congress when we got an additional $5 million to begin our focus on reliability efforts, in expectation that the energy bill would be passed, so we're still expecting that.

But we got the money, nonetheless, and got moving on getting a good team here to work, both permanent staff and technical advisors whom we've contracted with from the outside, whom we will visit with throughout the day.

At this point, I'd like to ask my colleagues if they have anything to add, before we turn it over to Joe.

COMMISSIONER KELLY: I'd just like to thank you for being here. We appreciate it. We look forward to a continuing dialogue. So far, it's been excellent. I know from talking to my staff, that their relationships with NERC staff, working on these audits, has been very productive, so thank you very much.
COMMISSIONER KELLIHER: I'd like to make one comment about the need for Congress to act and pass legislation to make the reliability standards enforceable. The past three major regional blackouts, July '96, August '96, August of last year, were all caused, in part, by violation of unenforceable, voluntary reliability standards. We've been taught a lesson three times, but Congress still has not acted to pass legislation to enforce reliability standards. I urge Congress to act in the last days of the session to pass the legislation. If they fail to do so, they will have done great disservice to the American people, and the next time we have a regional blackout, which I think will occur, absent some legislation, Congress will bear some responsibility. I urge them to act.

CHAIRMAN WOOD: We'll be joined later in the day by David Meyer from the Department of Energy, who has worked with us extensively throughout the entire blackout process, and I'll let him make some comments at the appropriate time, but until then, Joe, it's yours.

MR. McCLELLAND: Good morning. Welcome to the Federal Energy Regulatory Commission. As we say within the building, welcome to the FERC.

My name is Joe McClelland. I'm the new Director of the Division of Reliability. I should say the newly-created Division of Reliability. I'll be the Chairman for
today's meeting.

This is a technical conference for the Reliability Readiness Review Audits that have been organized and conducted by the North American Electric Reliability Council, or NERC, with participation by HERC.

(Slide.)

MR. McCLELLAND: As we are all aware, on August 14, 2003, the largest blackout in our history occurred. It affected over 50 million people and 61,800 megawatts of load. A detailed investigation by the United States-Canada Power System Outage Task Force produced a Blackout Report and identified specific causes of the blackout, and specific recommendations to help prevent similar occurrences in the future.

In fact, Recommendation No. 18 in the Blackout Report is entitled "Support and Strengthen NERC's Reliability Readiness Audit Program." A summary of the recommendation is as follows:

On February 10, 2004, the NERC Board of Trustees approved the establishment of a NERC program for periodic reviews of the reliability readiness of all reliability coordinators and control areas. The Task Force strongly supports this action, and recommends certain additional measures described below.

This is a nice little illustration, a satellite
illustration of before and after shots of the blackout. I think you folks have already seen it, so if you hit the second one --

(Laughter.)

(Slide.)

MR. McCLELLAND: The second one is a little better. Unfortunately, on the right was an Internet fake or forgery, but it is actually a nicer picture, so we decided to leave that in the presentation.

(Laughter.)

(Slide.)

MR. McCLELLAND: Sarah was testing this, and I said, no, no, don't put that up on the screen until I explained why I have it here. The purpose of today's conference is to review the review. In other words, we're going to take a step back from the audits and summarize what we have learned, both about the current state of reliability and about the audit process itself.

On this basis, we will identify the good and the bad for the public's benefit. We here at the FERC appreciate the hard work and effort expended by NERC and all the organizations that have been reviewed and have participated in the review process.

Your leadership and your cooperation in this effort will contribute to its success. The ultimate purpose
of today's technical conference is to improve the process and thereby to improve the reliability of the nation's bulk power supply system.

Now, that said, we're going to just do a few quick housekeeping items. Please feel free to step in and out of the conference room as necessary today. There are restrooms located past the elevators in the left and right hallways. I'm not sure if left is Men's or left is Women's, but you'll find out when you make that trip.

The Commission will accept comments to this conference, through November 1st. The Docket Number in which to file the comments is PL04-13-000.

With the housekeeping items, I thought we could begin with an introduction of just the folks, excluding the panel. We'll do the introductions of the panel in a second. Let's begin with introductions here at the front table. Please briefly state who you are, in other words, your name and the organization or organizations that you will be representing. Let's begin with Pat Wood.

(Introductions made.)

MR. McCLELLAND: I should mention that Tim is wearing two hats. After he finishes on the panel, he'll be joining us on the panel as a representative for Canada, and David Meyer is planning to attend. He's from the DOE.

Let's begin our first panel. The first panel
will provide a summary of the audits program objectives. From there, we've asked our distinguished guests -- and thank you all for attending today -- to provide their reviews and their views of the audit itself.

Let's begin with introductions, followed by Dave Hilt's presentation about the program objectives. What I'd like to do, folks, is start left to right, say who you are and what organization you represent, the immediately after we finish with Tim, we'll flip back over to Dave.

(Introductions made.)

MR. HILT: Good morning. Thank you, Chairman Wood and Commissioners, for the opportunity to be here. We really appreciate this opportunity to review with you, the Readiness Audit Program that the NERC Board of Trustees established in the wake of the August 14 blackout. As Chairman Wood has mentioned, at NERC we believe the Readiness Audit Program is the singlemost important thing that we can do today to enhance the reliability of the bulk electric system, and we believe, since we initiated the program, our goal for the program is to audit all the Control Areas and Reliability Coordinators on a three-year cycle.

In that effort of audit, we are striving for excellence among the entities we are auditing. We've had very strong support from all sectors of the industry in this
program, particularly from the volunteers. From the level of volunteers that we have seen, it's clear that the industry is taking their responsibility very seriously in this matter.

We look forward to today's discussion. The Readiness Audit Program is evolving, and we expect to improve it as we continue the program. We've already made a number of changes in the audit process, based, in part, on the feedback from the entities we've audited, in part from the evaluation session that Chairman Wood, and, I believe, Joe mentioned as well, with the audit team participants on your own staff, along with members who had participated in the audit, essentially from the auditors' perspective.

We expect to continue that development of that process as a result of today's meeting, so if you can put the slides up and just go on?

(Slide.)

MR. HILT: As part of a comprehensive set of actions to prevent future blackouts, as has already been mentioned, the Board established a program on February 10, 2004. This was a very, very aggressive program to audit all of the Control Areas and Reliability Coordinators, as we mentioned.

But we began with some field tests with a number of the entities that worked closest to the blackout
findings, and they were really the guinea pigs, if you will, on how do we do these audits. Looking at the Reliability Readiness from that, we modified the process. It was further developed and refined and we put it into the field. The first audits were actually conducted during the first week of March, again, a very aggressive schedule to get out and accomplish these.

Some of the folks on the panel here were in that first round of audits. I can't express my appreciation to them enough in putting up with some very short timeframes for completing questionnaires, et cetera, as we tried to ramp the program up. Some of those issues, we've already addressed.

Next slide, please.

(Slide.)

MR. HILT: The Readiness Audit Program is only one of several programs within NERC that we're utilizing to manage reliability from a compliance standpoint. We certainly have a compliance monitoring enforcement program, and, with that, there are audits conducted by the regions for monitoring organizations to specific standards, which is one of the other Blackout recommendations.

I think, in Chairman Wood's term, we crisped some of the compliance measures up. Those are now being monitored out there. We also have certification of new
Control Areas and some recertification activities, and we do a number of investigations, not only of events on the system, but of complaints with regard to things like TLR processes, and there are a number of those processes.

We have a number of other activities, including Version 0 Standards and the functional model that we're working on, but the program is really to help Control Areas and Reliability Coordinators to recognize and assess their reliability responsibilities, and helping them champion the changes they need to better meet those responsibilities.

Next slide, please.

(Slide.)

MR. HILT: A number of deficiencies were identified during the blackout investigation in areas for things like communication, coordination among operating entities, visualization, and the ability of the tools. All of that related to how they performed during a developing emergency, really, the preparedness of an operating entity.

Those areas of preparedness are very subjective to measure, and require review by some experienced individuals, to really look at how well is this organization performing. Are they prepared to perform?

You can have all of the documentation in the world, but if an entity does not have operators that understand what that means and how to implement that, that's
really the key to what we're trying to accomplish.

Next slide, please.

(Slide.)

MR. HILT: The Readiness Audit Program is an independent review group, utilizing those people with that appropriate experience. It provides an independent review of the Control Area and Reliability Coordinator operations, to assure they have the preparedness to meet their reliability responsibilities.

We are looking to identify areas of improvement where they can improve their operations, and we're looking to share some best reliability practices across the industry, and we see much of that already happening in these reviews, just among the participants.

We believe we need to be very constructive. We need to help Control Areas and Reliability Coordinators achieve that excellence in their operations.

Next slide, please.

(Slide.)

MR. HILT: I won't go into this slide in detail. It lays out at a very high level, the audit process that we have been using. It basically goes through the process of collecting questionnaires and information ahead of time, sharing that with the audit team, reviewing that, preparing for the audit, for the onsite meeting, onsite visit where we
actually break into teams and sub-teams and look at the full operation and the develop reports from that, which are now posted on the NERC public website. Next slide, please.

(Slide.)

MR. HILT: Where are we with it? As of September 24th, audits have been completed in 37 Control Areas; four Reliability Coordinators, and one transmission operators. Some of the Control Area audits are operational centers that operate multiple Control Areas, so there's a smaller number of our onsite visits.

But in terms of numbers, that's the number of Control Areas. That represents 64 percent of the Eastern Interconnection load, electric demand in the Eastern Interconnection, and 14 percent in the Western Interconnection, to date.

So, we started, obviously, with some of the very large entities out there, because there are roughly 145 Control Areas in North America, and 18 Reliability Coordinators.

Next slide, please.

(Slide.)

MR. HILT: As was mentioned earlier, it's a pretty aggressive schedule, continuing in the Fall, obviously, to audit that many entities. We need to complete more than one a week. We have 20 audits scheduled in the
Fall in 21 Control Areas. Some of them have multiple Control Areas and one operational center and two Reliability Coordinators, trying to reach the goal of doing at least 50 in this calendar year.

The remaining audits will be completed by the end of 2006 in the current schedule. This, again, requires a lot of commitment from the industry, a lot of commitment from NERC and FERC to get into these audits, as well as our friends in Canada.

(Slide.)

MR. HILT: In terms of improving the process, we believe that it is a strong program, but as we roll it out, we're finding areas for improvement. We are finding some examples that we would consider as best practices, that are already being shared informally by the people who are participating in the audits.

We need to find ways to improve that. We've conducted surveys of those. We've audited and received some feedback on the audit process. I know that some of the folks here at the table today responded to our earlier survey, and, as mentioned, we had an auditors' review meeting at the end of June, where we included NERC Regional and the folks who participated in many of these audits, to give us some constructive feedback on the audit process from the auditors' perspective.
Today, what we hope to achieve is to get some constructive participation from those who are actually reviewing the audit reports. We're putting material out there. There are some 23 audit reports currently available for people to review on the NERC website, to see, are they meeting the objectives of what the reader of that report is expecting.

From that, we hope to again take a step forward and improve the process. Thank you.

MR. McCLELLAND: Thank you, Dave. The format -- and I neglected to say this in the housekeeping issues, but the format that we'll use is, after each of the presentations, if there are any questions, we'll handle those burning questions now, otherwise, let's hold off on the questions until the panel is finished, and then we can accept questions to the entire panel. In that case, it would be Dave's presentation and the collective views of the folks in the panel.

With that said, are there any burning questions for Dave at this point?

Yes?

COMMISSIONER KELLIHER: I have just one smoking question.

(Laughter.)

COMMISSIONER KELLIHER: On Slide 70, when you
reviewed the audits that have been completed to date, you noted at the end that those audits represent 64 percent of the Eastern Interconnection and 14 percent of the Western Interconnection.

I'm just curious about the disparity in those numbers and why the Western number is so much smaller?

MR. HILT: That's a very good question. There's also another interconnection. Chairman Wood is very familiar with that one, ERCOT. The focus had been starting primarily with the East, because in the Western Interconnection, with their management program that you folks have approved, there have been a number of audits performed there, and we felt the priority in getting through the initial round of audits was to focus on the Eastern Interconnection and to begin to engage with the Western Interconnection in the process that they currently have.

It's certainly been enhanced by the Reliability Audit Program, but we did not necessarily focus on the largest entities in the Western Interconnection at the outset.

COMMISSIONER KELLIHER: But have there been audits conducted, other than under NERC's auspices, then, in the West?

MR. HILT: Certainly under NERC auspices, but as part of the Compliance Enforcement Program in the West and
the Reliability Management System that they have approved and that they have filed here with the FERC.

COMMISSIONER KELLIHER: Thank you.

MR. McCLELLAND: Any other burning or smoking questions?

(No response.)

MR. McCLELLAND: Let's move on to the views on the audits. Let's start with Scott Moore. I understand that you have an obligation or conflict today, so we'll need to hear your views first, and so we're a bit constrained on time, and from there, we'll move to my left, your right, and we'll move to Bill after you. Thanks, Scott.

MR. MOORE: Thank you. I do have time constraints, but not that tight. I'm Scott Moore, with American Electric Power. My comments will be very brief.

First of all, AEP is a very strong believer in firm reliability standards that are mandatory and compliance to those standards. We welcomed the opportunity to be in the review process, not quite as early and with as little time as we had to respond, but we thought that was a very good process to go through.

In general, I think the self-assessment was a very good tool, even though AEP has very good tools and practices in place, doing self-assessment forces you to look at those things, in-depth, again, as you prepare to explain
them to a third party.

And so that gives you an opportunity to really self-assess what you're doing, have you looked at it recently, and are you prepared to explain it to a third party, so that they understand it, and it forces you to be better in that process.

And so we believe that that was a good tool for the audit, although AEP believes that it should be more of a readiness review or readiness preparedness, versus the term, "audit."

As Dave mentioned, we had very little time to answer the questionnaires, because we were --

CHAIRMAN WOOD: Why is that?

MR. MOORE: Why is that? The review, in my mind, about 30 percent to 40 percent is really compliance with the standards. I think that the great value out of it is the other 60 to 70 percent which is not so much compliance with standards, but in terms of looking at what you do, looking at your tools, looking at how prepared your operators are, which you really can't judge by a standard itself.

And so a good portion of the review is compliance, which you can term an audit, but AEP believes and I believe that the greater value was the review of what we were doing and what we do, and compare that to best practices, which I'll get to in a moment. And so that's why
we say more of a review than audit, because of where we place the value in the process.

The types of questions that are on the audit and the self-assessment -- and, of course, we were one of the first companies, and so it has changed since we were reviewed -- but they are very detailed. In a lot of cases, you could do a yes or a no, and if you answered a no, you needed to provide comments.

AEP believes that even in the yes-questions, where you could simply put a "yes," there's much more -- it's much better to require comments to explain why you have a "yes" to the question. And so the questionnaire itself, I believe, could be a little bit crisper and require a little bit more work, because that's where you really do the self-assessment as you think about and have your engineers thinking about, well, how do we comply with whatever the question was, instead of simply putting a "yes."

This takes us to the neighboring Control Area questionnaire. If it's to remain, then that thing needs to be changed quite a bit.

We have concerns that there's vagueness in that questionnaire, that a neighboring Control Area can raise an issue, without really explaining what the issue is, and whether or not they had tried to resolve that issue.

And AEP had one of those questions that was in
our audit. The audit team felt compelled to raise it and put it in our recommendations, because it had been raised. In actuality, this was the first time AEP was even aware that there was an issue, and we it was resolved the very next day.

But we don't believe the -- the questionnaire should be crisper and should not allow a Control Area to basically throw stuff up that the other Control Area, you know, hasn't been discussed before.

One of the things that we believe is most important is the best practices piece of it. What comes out of the audits? I've had the opportunity to read a few of the other audits and look at it, but I think and I believe that NERC's plan on this is to do a summary of best practices, so that I can compare my operation to those best practices.

Or course, with us being one of the first ones, that has not been done, but I'd like to compare myself and be able to improve our operation. I think the audit showed and I believe that we were doing everything we needed to do, but we did a thorough review, and are going to be doing things better, and I think that was very important.

I guess the last piece from Mr. Wood is, in approximately 38 hours, AEP will no longer be a Control Area, and so even though we'll be the largest transmission
operator of the system, we will no longer be a Control Area, and I think --

CHAIRMAN WOOD: We'll be watching it.

MR. MOORE: As will I. So, with that, I'm finished.

MR. McCLELLAND: Thank you, Scott. Any burning questions for Scott at this point?

(No response.)

MR. McCLELLAND: Okay, Bill?

MR. PHILLIPS: I'm Bill Phillips. I'm Vice President of Operations for the Midwest ISO.

The prime directive for any regional transmission organization is to ensure the reliability of the transmission grid. In the Midwest ISO, we have invested heavily in technology and talent to ensure that we are up to that task.

But it is coordination and commonality of expectations that are the keys to maintaining reliability over the highly-interconnected portions of the grid. The standards of the North American Electric Reliability Council have historically provided that commonality of understanding and the procedures upon which the industry has operated.

The Midwest ISO has participated in four NERC audits since becoming an RTO. Accordingly, I thank the Commission for arranging today's conference and for allowing
the Midwest ISO to speak to this very important issue.

My generic comments address three subjects:
First, the composition of the audit teams; second, the
consistency of the audit standards; and, third, the schedule
for reliability coordination readiness audits.

The NERC audit teams, historically composed of
NERC staff and professionals from utility organizations,
should be a permanent staff of professional auditors
dedicated full-time to this function alone.

This will allow not only more independence in the
auditing process, but more consistency as well. Let me also
be quick to add that in any movement toward permanent staff,
it is critical that personnel highly skilled and experienced
in power system planning and operations, be selected for
those roles.

Operators from other utilities who may have
developed stopgap measures or work-around procedures in
their own control centers, may be reluctant to criticize
their colleagues for similar practices. This may not
threaten the grid on an isolated basis, but the cumulative
effect over time, is to turn what should be standards, into
a loose collection of local interpretations, all approved by
the most recent NERC audit.

More important is the inability to meaningfully
compare one operating entity or reliability coordinator with
another. Because these different teams are assembled for each audit, and even the NERC staff may change from one team to the next, NERC, FERC, and peer groups in the industry are prevented from placing audit reports side-by-side to compare readiness capabilities.

The subjective judgments of the audit team create variability in the final reports that may distort relative performance. This leads to my second point:

Standards upon which entities are audited, must be clear, specific, and consistently applied. I have participated in the NERC committee meetings for 22 years, and I have chaired the NERC Operating Committee.

That experience leads me to conclude that the process by which standards are developed, requires a degree of consensus that often leads to watered-down and vague standards. The standards may be acceptable to the majority of the industry participants, but they do not necessarily produce the clear, unequivocal, and objective criteria that make audits more effective and promote harmonious interactions between control areas and regional transmission organizations.

For example, the August 25th Reliability Readiness Coordinator Audit Draft Procedures, which I believe are quite good in most ways, contain the following statement: The audit team is charged with assessing the
degree to which the reliability coordinator meets the intent
of the NERC policies for reliability coordinators.

If NERC standards were clear, specific, and
consistently applied, this statement would be unnecessary.
As written, the statement may be read by one audit team as
an excuse to approve operating practices that don't meet the
literal standard, but are adequate, in the subjective
opinion of the auditor, to meet the intent.

But in another region, another audit team may
view this same language to require a reliability coordinator
to undertake corrective measures, over and above the written
standard, to meet what that audit team interprets as a less
forgiving standard.

Finally, I would note that the proposed schedule
for NERC to complete its audits of the existing reliability
coordinators, simply is not aggressive enough. NERC has
been successful in auditing approximately 30 control areas
in the last year, and eight of the reliability coordinators
in the Eastern Interconnection have undergone audits of
their control area responsibilities.

But only PJM and the Midwest ISO in the Eastern
Interconnection have undergone reliability coordination
readiness audits in this same time period, and even
including the other interconnections, only the Pacific
Northwest Security Coordinator has also undergone a
reliability coordinator readiness audit.

This process must be given the highest priority, simply because many of the existing deficiencies likely to be identified, will take time to correct.

Getting to a uniform application of tools is a significant investment in time and money. A status estimation tool, for example, cannot be installed and expanded overnight. The sooner those responsible for regional grid monitoring, all operate pursuant to the same clear standards, using compatible tools and common communication protocols, the sooner the Commission will be able to judge expansion plans and rate treatment for added reliability tools.

Accordingly, I would recommend that all reliability coordinators be audited and corrective measures implemented before May of 2005.

In conclusion, NERC provides vital services to the power industry and has performed admirably and professionally. The experience of the Midwest ISO has been very favorable.

The NERC staff has been consistently professional and well informed. Similarly, the teams assembled for the audit process, have been comprised of more than capable and experienced individuals.

As the industry changes, however, the NERC audit
procedures must keep pace. As I have discussed, there are a few structural impediments that have hindered the capability of NERC to improve the process.

While the recent changes are definite steps in the right direction, NERC must not be timid about taking greater steps and pushing for more frequent and more thorough audits.

Again, I want to express my appreciation to the Commission for the opportunity to participate in today's conference. I would also like to commend the Staff of the Commission for participating in the Reliability Readiness Review Audits that have occurred since August 14th. The Midwest ISO looks forward to working with the Commission, NERC, and other participants through this process. Thank you.

CHAIRMAN WOOD: Bill, do you think MISO and its member companies and member groups would support the type of increase to the NERC permanent staff that would be necessary to do this audit function on an ongoing basis?

MR. PHILLIPS: I can assure that the Midwest ISO would. I believe that substantial portions of our stakeholders would.

CHAIRMAN WOOD: Thank you.

MR. McCLELLAND: Just a quick followup to that question, what would the composition, the ideal composition
of that team be? How many individuals and what specialties?

Have you given that any thought?

MR. PHILLIPS: I have not given it great thought.

As I indicated, they must have great degrees of expertise and experience in power system planning and operations. Those are the functions that they are there to review and judge, but the reviews and the judgments should be against the standards, good standards.

MR. McCLELLAND: Thank you, Bill. Are there any other burning questions, or can we hold the questions?

COMMISSIONER KELLY: Bill, regarding the independence of the auditors, do you think if there's a permanent staff at NERC, that that independence would be compromised over time? How about the funding? Would that compromise the independence of the auditors?

MR. PHILLIPS: I'll answer the funding question first. I think the funding has to go with the funding mechanism that exists today.

COMMISSIONER KELLY: Because there isn't a better one, or because it's the ideal one?

MR. PHILLIPS: Because there isn't a better one or there isn't a different approved one at this point in time. Perhaps that will come with legislation, in terms of losing its independence over time.

Actually, I have hope of NERC's staff and its
purpose and its responsibilities, gaining independence over

time, over what it has displayed in the past.

COMMISSIONER KELLY: And setting the audit

standards, would you see NERC setting the audit standards?

MR. PHILLIPS: Yes.

COMMISSIONER KELLY: Thanks.

COMMISSIONER KELLIHER: I just want to ask Mr. Phillips, are you aware of INPO's auditing process? How are

their audit teams composed? Are they composed of permanent staff?

MR. PHILLIPS: My last involvement with INPO has

been about 20 years ago when I actually supported nuclear generation. I'm a bit familiar with their audit process.

My understanding, at least at that time -- I don't know if it's changed -- this was not a long -- for a week an few days doing an audit. It was a case of companies actually providing INPO with staff on loan for a year, maybe two, maybe three.

These were rather extensive stints, if you will, different than anything I've seen elsewhere.

COMMISSIONER KELLIHER: Thank you. Just one question for Mr. Hilt: What is NERC's view of the merits of permanent staff to perform these audits?

MR. HILT: Certainly there are some merits in having permanent staff in terms of gaining independence and
avoiding, obviously, issues that you may have run into at times, in finding volunteers to participate.

We, too, have spent quite a bit of time with the INPO folks. Mr. Phillips is correct that they use a number of what they call loan employees, and they have a program. We're looking at some options that we may be able to implement in a similar fashion, and it has some advantages, from that standpoint.

If you bring someone in from the industry and have him as a loan employee for a period of months, you can go back and industry and keep current in industry technologies, industry applications over time.

We think there may be some advantage to it from that standpoint, as well.

COMMISSIONER KELLIHER: Thanks very much.

MR. McCLELLAND: A quick question: In that regard, Dave, if you did a loan program, you wouldn't -- at least I don't think you would -- completely address one of Bill's points, which is the composition of the team, the consistency.

Even on loan, even with folks with similar backgrounds, you'd still have different emphasis, and to do side-by-side comparisons to the report itself, would still be difficult, so you may have some consistency for some period of time, but do you see that you might still have
that problem, albeit, to a lesser degree?

MR. PHILLIPS: We potentially may still have the problem. Obviously, the volunteers you have, you get different mixes of expertise. In the audit teams, you try to establish some criteria for what we expect on each one of the audit teams.

You may be able to provide -- in a program like that, you may be able to establish a little more rigid criteria for people who want to participate in the teams.

COMMISSIONER KELLY: How does WECC do their audits?

MR. HILT: WECC is now completely joined with the NERC program. Previously, in terms of their RMS audits, they were not quite as extensive as the readiness audit that we're currently doing, so their audit program has been expanded to include that, with very similar programs, very similar staff, along with industry volunteers to participate in the audit team.

MR. McCLELLAND: Thank you, Bill. Jack?

MR. BERNARDSON: I'm Jack Bernardson, President of Pacific Northwest Security Coordinator. PNSC is a nonprofit Washington corporation organized solely for the purpose of what is now called reliability coordination, so we're somewhat different from other organizations performing this service in other areas.
PNSC was pleased with both the process and the product of our readiness audit. The notification documents that were provided to us -- and I guess it's significant to note at this point that our audit was somewhat later than some of the other audits that were performed, so things had been developed somewhat better -- but the notification documents provided adequate time and detail to ensure that both PNSC and the audit team were prepared when the audit team arrived.

Besides, the composition of the audit team provided substantial diversity, which PNSC feels was valuable in developing the evaluation of PNSC's strengths and weaknesses. I guess I would add to Mr. Phillips's comments, that I think that there's an element of diversity that may not -- that you may not achieve, if you have the same team over and over, but there may be a way of reducing that with a few volunteers to the core group.

Selection of team members is among the most important factors affecting team performance. Also, they are among the most important factors for creating differences in the output. And I guess PNSC's approach to looking at the audit report was not to look at it on the basis of comparing it with other individual -- other reliability coordinators' audits, but just to be able to determine what we could do to improve.
So, we didn't -- weren't troubled as much by any possible disparities between the reports. The most important aspect that we saw of the audit, was that the audit team remained focused on helping PNSC to develop, maintain, and improve its capabilities to monitor and analyze the interconnected system and to ensure its stable and secure operation, and in the event that there was a disturbance, to coordinate the return of stable and secure operations.

We didn't note a lot of concern about the precise details of the compliance with policy, policy which has been developed over, I guess, about seven years, reliability coordinator policy. It is getting closer to the measurable state that it needs to have to ensure consistency.

Although there were no significant conflicts between PNSC and the audit team regarding the substance of the report, the NERC process does allow for resolution of such disagreements, and we think that's an important consideration.

Now, finally, the resulting report provides adequate detail and explanation. PNSC's Board of Directors met Monday, and that body is using the document to guide its efforts at improvement in the short term, as well as over the next few years.

We were overall pleased with the process. We see
ways that it can be improved, but we're pleased. That
concludes my remarks.

MR. McCLELLAND: Do we have any burning questions
at this point?

CHAIRMAN WOOD: Just to understand the role, underneat WECC, there are four --

MR. BERNARDSON: Three.

CHAIRMAN WOOD: Three RCs, and you're the one in
the Northwest?

MR. BERNARDSON: Yes, sir.

CHAIRMAN WOOD: Cal ISO and then there's one in
the Rocky Mountains.

MR. BERNARDSON: Loveland, Colorado.

CHAIRMAN WOOD: Okay, and they handle the?

MR. BERNARDSON: Desert Southwest and Rocky
Mountain area.

CHAIRMAN WOOD: And so your role is to
coordinate, then, the various control areas underneath you
within the Northwestern area?

MR. BERNARDSON: That's correct, seven states and
two provinces.

CHAIRMAN WOOD: And VPA, are you still sited in
the VPA headquarters?

MR. BERNARDSON: We have a contract with VPA
where they provide us with some technical support, and
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office space, that's correct.

CHAIRMAN WOOD: And how many employees are

working at PNSC?

MR. BERNARDSON: In theory, there aren't any

employees. We have all people from separate corporations

that work for us. We have no members and no employees.

There are about nine FTEs, I guess. We have eight FTEs that

work directly in support of the organization, and then we

fund a lot of different technical people from time to time,

to work with us.

CHAIRMAN WOOD: How is it funded?

MR. BERNARDSON: Through WECC membership.

CHAIRMAN WOOD: Thanks.

COMMISSIONER KELLY: Jack, are you familiar with

the WECC audit process that occurred before the NERC audit

process?

MR. BERNARDSON: I am.

COMMISSIONER KELLY: Can you give any

comparisons, things that that process had that this one

might have, or ways that this process improved on that one?

MR. BERNARDSON: They are separate purposes. The

WECC system was a compliance audit, so it concentrated on

compliance with the various policies and processes, whereas

this one focused more on whether or not the job could

actually be done.
It's possible for an organization to be fully compliant with all policies and still, even to the not-so-trained eye, you can tell that they really aren't as flexible or competent as they might be.

On the other hand, it's possible to be ready to deal with situations and have the broad situational awareness that we're looking for the in reliability coordinator, and still maybe not be compliant yet with all of the details.

COMMISSIONER KELLY: As we move ahead, as the audit process evolves, how do you see it evolving? Will it -- presumably it will include more compliance aspects. Should it also have a readiness aspect to it?

MR. BERNARDSON: It certainly doesn't make any difference if they are compliant and we can't do our job, so readiness has to be the primary component. If we've done correctly, of course, compliance with standards will demonstrate the likelihood of being able to perform work, so we still have a ways to move in the development of useful, measurable standards.

COMMISSIONER KELLY: As a security coordinator when you see difficulties arising within your area, how do you communicate that to your members? Do you go to WECC, directly to your members? How does that work?

MR. BERNARDSON: Directly to the individual area
with the problem, because they usually have the solution as well. If they don't, we coordinate it amongst the operating entities that have the possible part of the solution. We do our best not to ever have to issue a directive, because if we have good tools, we see the problem develop early, and we analyze the situation and communicate that to the control area operators, who have the obligation to serve in the best interests, with the knowledge of the people and the facilities involved, so they're best able to develop the solution. It almost always happens that way.

COMMISSIONER KELLY: Thank you.

CHAIRMAN WOOD: Dave Hilt, I was thinking back, after hearing Jack and then thinking back to what Bill Phillips had recommended as a third point, I was wondering, considering the role that the reliability coordinators play, is there a thought toward the schedule of getting all those tasks done ahead of some of these smaller control areas, or are some of these control areas more the Achilles Heel of the system?

MR. HILT: We'll take this back and take a look at it. Probably the reason we have not included the reliability coordinators in our very aggressive schedule, is that there have been previous audits of the reliability coordinators, primarily compliance audits performed by NERC. Those are posted on the website, so you can look back at
Jack's previous audit, which was probably in 2001. But there have been other audits of them, as Bill mentioned. I think he's been audited four times now. As footprints change and things expand and change within the Midwest ISO, obviously, as the changes take place, there have been a number of audits, but we'll take that back, Pat. I think we'll take a look at that and see if we need to do that.

CHAIRMAN WOOD: Sounds like it makes sense.

MR. McCLELLAND: Thank you, Jack. Mitch?

MR. NEEDHAM: Thank you, and good morning. I do have some slides prepared, if you would, Sarah.

(Slides.)

MR. NEEDHAM: I'm Mitch Needham, and I'm with the Tennessee Valley Authority and I'm the Manager of Compliance and Standards for Electric System Operations. That's located in the office of Transmission and Power Supply.

At TVA, this is the group primarily responsible for the proper reliable operation of the transmission system.

In case you're not familiar with our location, TVA is a member of the Southeastern Electric Reliability Council. We affectionately call them SERC, so we've got SERC and NERC and FERC, and we're into the 'ERC business, also.
MR. NEEDHAM: This is one of the ten NERC regions, and TVA exists as one of the four identified subregions within SERC.

As a quick overview, the TVA control area serves an internal load of approximately 30,000 megawatts and also internally-owned generation of about the same amount. Our Summer and Winter peaks are similar, although the load profile does shift between the hotter and cooler weather seasons.

In the control area, there are 12 independent power producers, which total approximately 7,300 megawatts. The primary bulk transmission system contains over 17,000 circuit miles of transmission lines, from 500 to 161 KV, and is controlled through a system of over 500 substations and switching stations.

MR. NEEDHAM: This next slide is just a quick overview of our EHV system, the 500 KV system. This system support power transfers, and is an integral part of the Eastern Interconnection.

TVA actually has over 60 interconnection with our neighbors, and supports power transfers north to south and east to west. You can see from the 500 KV system that that's a fairly critical cog in the Eastern Interconnect.
On April 21st, we welcomed the Joint Control Area
Readiness Audit Team to TVA in Chattanooga, Tennessee. The
team consisted of a representative from NERC, three
representatives from other utilities in the local SERC
region, one SERC staff representatives, a representative
each from ECAR and WECC, and two representatives from FERC.

The team was co-led by the NERC member and one of
the SERC utility members. This was a total of nine people
on the audit team.

The team arrived at TVA facilities on April 20th
and spent that first day reviewing materials gathered for
their assessment. The two actual audit days were devoted to
presentations, interviews, and additional fact-gathering by
the team.

The audit itself was the culmination of many
weeks of preparatory work, which I will cover briefly.
Following the August 14th blackout event, TVA, like most
utilities, I suspect, embarked on a very intense examination
of our own processes to identify any potential weaknesses
and to promptly shore them up.

A result of the August 14th event, ESO -- that's
Electric System Operations -- formed a task force to
identify and track action items for the reliability of the
TVA system. This list eventually grew to 37 action items,
and included all of the NERC recommendations that came out
of our audit.

After NERC announced the Readiness Audit Program, and TVA learned we would be one of the initial entities audited, the preparation became much more succinct. TVA spent a good deal of time providing a comprehensive response to the self-assessment questionnaire, which was mentioned earlier, believing, correctly, that this would provide the basis for the actual audit.

This involved gathering appropriate written procedures for the audit team, determining any necessary evidence to show adherence to those procedures, and to make certain that our information infrastructure and training were at the correct level.

Through this process, we were able to identify internal subject matter experts, as well as to make sure that the audit team had adequate access to any power system operators they needed to interview.

(Slide.)

MR. NEEDHAM: This slide shows the principal groups in Electric System Operations who supported the audit, either directly or peripherally. The organization shows our earlier adoption of the functional model nomenclature that NERC had adopted.

The four groups in the center column contain TVA's NERC-certified operators. That's 72 individuals, in
TVA approached the readiness audit with a mindset to accentuate what we believe are the prime factors in ensuring electric system reliability: Organizational engagement from the system operators to the management staff; state-of-the-art facilities, both backup and primary; autonomous control of the operating systems -- that's both power system level and information technology that supports them; and having very regimented outage coordination and communication protocols, both internally and with our neighbors.

(Slide.)

MR. NEEDHAM: This final slide shows the framework for our approach to emergency preparedness. You'll note a lot of opportunities for communications, regardless of whether the emergency is as a result of an operational abnormality, or a security risk.

You've probably seen the TVA audit report posted on the NERC website. TVA believes the audit process was beneficial to us, in that it provided an opportunity to closely examine our internal processes and to have them reviewed by experienced colleagues.

The overall result has been a heightened awareness of the roles we all play as we strive to design, build, and operate a part of the biggest machine on the
earth, which is the electric power system.

In addition, TVA has been an active participant on other readiness audit team, and as Dave has already mentioned, that was a great benefit to us, by seeing, firsthand, other utilities and their best practices, the things that they have developed.

I do appreciate your attention and I look forward to further discussions in the technical conference. Thank you.

MR. McCLELLAND: Thank you, Mitch. We'll move to Steve.

MR. WILLIAMSON: Thank you. I'm Steve Williamson, Director of Bulk Power Operations at Southern Company.

When the blackout happened, we, like everybody else, saw the spike in the frequency, and immediately started to try to determine what the cause of it was, so there was -- I would say that our response to the blackout started the day of the blackout.

So in that, we started looking at what our system, how did our system react, what did it do? Did the generators do what they were supposed to do? Did all of those things happen?

So, we were doing those sorts of things. Also at that particular time, we had a President at Southern Company
that was much more technical than most Presidents are, and
you've all have seen Mr. Franklin many times in the past.

So he immediately started asking questions, and
we did, to answer his questions, what I would consider a
pretty in-depth self-assessment of where were, all the way
from the planning process to operations, to the restoration.
So we were doing all of those things in preparation prior to
the audit.

We were one of the early ones. As you said
earlier, the Board approved this in February and we were one
of the March participants.

So we had to hurry and scurry to get the
information together, because, again, a lot of the
information on the self-assessment, that, again, falls into
the audit, was not the type that we normally keep in a
drawer or readily accessible, so we had to gather those
things up.

The good thing about that is that it forced us --
as we were gathering it up, we asked ourselves some
questions that maybe we hadn't asked before. So, as we went
through that process, we -- in getting ready, we gained i.In
preparation for the auditors to get there.

I think the comment about some of the
questionnaire questions could be yes or no. We made the
assumption that we had to answer more than that. We didn't
necessarily send that information in, because, again, early on, the confidentiality agreement issue was still evolving about how this was going to work out.

    But we prepared books for the auditors when they came onsite, that had that information that if it was a yes, yes, why? If it was a no, no, why? So that information was made available to the auditors when they came onsite.

    I feel I'm repeating about half the things other folks have said, but we feel strongly that there is a huge benefit to the audit. We feel strongly that mandatory standards are important.

    We also feel like the audit team needs to have actual operating experience to be able to know what they're looking at. When you look at a pig, it doesn't need to look like bacon.

    We really need to know -- so, we're really a little concerned about not having audits, but having good standards and good auditors. To me, it's more important to have consistent standards than consistent auditors.

    And I think one thing that's important to remind all of us is, we did this real rapidly. I know Bill's concern is legitimate that we didn't -- there are still things to be done.

    But I think to start from ground zero and get as much done as we got done in that short period of time, as it
was evolving, is important to note.

The big thing that came out of that, I think, is the accountability. All of a sudden, we're sitting there and everybody is trying to run a good control center or a good control area or be a good security coordinator, but, all of a sudden, you've got someone else that you've got to answer question to. Your accountability is a little bit higher.

It's like a safety audit. You know, when somebody -- you're operating safely, but you've never looked around. You've kind of gotten used to the file drawer being open and sort of those kinds of things, so this audit just made all of us raise our awareness higher than it had been before. That, in and of itself, has a benefit.

So, continuing that awareness with standards, is going to be a huge benefit to the industry. Thank you.

CHAIRMAN WOOD: Steve, you've got a number of control areas around you that are relatively smaller, compared to Southern Company, and I wondering, how did that questionnaire process -- I think Scott, you mentioned it in your comments, was kind of pretty black and white. I mean, was that -- did that provide any input, or did you all ever -- do you get to see that, actually, or is that just when the audit team gets there?

MR. WILLIAMSON: No, we did not see it. The
audit committee saw that questionnaire's response. But we -
- I think that the way we work with our security coordinator
around us -- and there's a real tight dialogue, you know,
with those folks.

We were not surprised. I think a bigger issue we
had was for internal. We have a lot of independent power
producers, and getting information that the audit asked
about, about the relay settings and some of those sorts of
things, that by not being a member of a reliability council,
they did not have to push that through a certain envelope,
so those were the kinds of things that we -- there was an
awareness to us, that we needed to go back and get some
information that we just didn't have.

So, that was more of an internal issue than it
was external to us.

CHAIRMAN WOOD: As to the security coordinator,
your part of it would be who?

MR. WILLIAMSON: Steve Corbin, and Southern
Company is the security coordinator for the Southern
Subregion, and, you know, we -- obviously, inside Southern,
we run the security desk, so you're knowledgeable of what
you have.

I think what we've been able to accomplish since
the start of that process, is a relationship with the other
entities that while he is a Southern Company employee, he's
been able to establish a trust level with those other folks, that he's not going to make a Southern Company decision; he's going to make a security coordinator's decision, and I think that's the only way it can work.

CHAIRMAN WOOD: Jack, why did they set up a separate one in the Northwest?

MR. BERHARDSON: Well, I'm not sure we have enough time to discuss all of the reasons, but it started out being a matter of trust. We were asking for a lot of information.

A reliability coordinator cannot function without data. You get it, you process it, and distribute the results. And there was a concern that that information could be used to somebody's commercial advantage. That was part of it. Another was to lock in solid protection against the reliability coordinator making economic decisions. So, we tried to stay out of that with the decisions.

Our story is that we want the region to have good, sound economic solutions, because if they allow congestion management to get to us, we're going to make decisions that aren't going to be very pretty; they're going to be timely and effective.

And they were also worried about liability, so our -- the empowerment agreements that we have are bilateral
agreements, one with each one of the 16 control areas that
we deal with.

CHAIRMAN WOOD: David, how many -- David Hilt,
how many of the reliability coordinators are actually
independent of the control area or the transmission
companies? We've got, what, about 20 in the continent?

MR. HILT: There are 18 within North America
today. Primarily, the bulk of them are independent from one
of the control areas, with the exception of things like in
the RTOs where PJM is a control area and the reliability
coordinator, as well as near the Northeast.

It was one of the focuses of our last round of
audits, was confirming that independence of the actual
decisionmaking in those organizations. Southern and TVA,
both, of course, are reliability coordinators, and we spent
quite a bit of time looking at that, and there are some
details on those in the previous audit reports.

CHAIRMAN WOOD: Thank you.

MR. McCLELLAND: Thank you, Steve. Now we'll
hear from John from the New York ISO.

MR. RAVALLI: Thank you. I'm John Ravalli from
the New York ISO. I'm Supervisor of Power System
Operations.

The blackout did, as Steve stated, raise the
awareness of readiness and reliability requirements for
system reliability. And New York, having gone through being affected by the blackout, did review its processes prior to a NERC audit, and we continue to feel that we do run a reliable system.

But the New York ISO welcomed the NERC readiness audit, to demonstrate that we do operate a reliable operation. The audit was in April of 04. New York also does feel that mandatory standards should be in place for compliance.

As far as the questionnaires, we were given a questionnaire. We responded to that questionnaire, and our neighboring control areas also responded to that questionnaire, and we felt the questionnaire -- maybe if it was April, we had enough time that we were able to prepare, in the sense of having packets ready for the audit team, with all the information, to gather it in a fashion that they would be able to go through it in an efficient manner.

Let's see, I think, then, as we go through these audits, it did strengthen the reliability and the awareness of the control areas and the RCs. We were audited as a control area, not as the RC, but I did see that there was a lot of overlap from the audit team, and questions that we were -- our reliability coordinator roles as a control area also, so I think, to some degree, we did delve into our reliability RC role, even though it was a control area
I feel that having our peers, our neighbors, on part of this audit team, is very important. There's nobody more interested in New York operating a reliable system than my neighbors, IMO, New England, and PJM, so that they have the assurance that I'm operating reliably.

So, I feel that we need to have peers on this audit team at the same time as possibly independent people, but part of the makeup of that audit team.

I think that's pretty much all I have to say. Everything else seems to have been expressed.

MR. McCLELLAND: Thank you, John. Tim?

MR. KUCEY: Good morning. I have comments from both the Government of Canada and the IMO, however, as it's likely appropriate to speak only about the IMO and I'm on this side of the table, I'll save the Government of Canada's comments for later.

As noted in its recent comments filed with the FERC, dated September 27, the Ontario Independent Market Operator, the IMO, is the NERC Control Area Operator, as well as the NERC Reliability Coordinator for the bulk power network of the Province of Ontario in Canada.

By Provincial legislation, its responsibilities also include the establishment and administration of the Province's wholesale electricity market, as well as
The IMO is pleased to participate in today's conference, particularly this opportunity to speak. In light of its own recent reliability readiness audit experience conducted in April of this year, and of its own review of the audit program, the IMO has several comments to share here today.

To begin with, the IMO has not submitted any comments to NERC regarding the readiness audit of the IMO and has no comments to add to that today. Next, the IMO would like to express its general agreement with the points that Chairman Wood made in his letter of 28 July 2004 to NERC, proposing this conference.

However, the IMO would like to use this opportunity to suggest or recommend the following seven points, which, for clarity, I will identify, using the numbering scheme used in the IMO September 27th submission, and, for brevity, will identify and summarize only, in lieu of reading out the entire text of that letter.

The IMO's first points A and B concern audit timeframes. IMO Point A is that the rigor and thoroughness of future audits must be enhanced in order to gain complete insight into reliability practices.

Point B is that the length of time allowed for a review should be increased, should not be subject to an
arbitrary upper limit such as the current three days, and suggests that timeframes for evaluations should be minimums, rather than ceilings.

IMO Point C concerns audit team makeup. The IMO believes that an independent and experienced auditor, ideally a professional auditor drawn from outside the electric industry, should be included in each audit team.

Point C also notes that IMO welcomes the participation by Canadian Regulatory Authority staff and the FERC in any audit it is subject to.

IMO Point D concerns entities subject to the reliability readiness audit process. The IMO suggests that all operators whose actions could significantly affect interconnected reliability, for example, generation and transmission owners and operators, in addition to reliability coordinators and control areas, should potentially also be subjects of the readiness audit program.

IMO Point E concerns the audit program process and its guideline documents. The IMO believes that the process should be based on a uniform audit plan, issued in advance, one of the clear objectives and criteria, in part, so that various audits are as directly comparable as possible, and greatest insight from the findings can be drawn.

Point F -- and I will highlight that of all of
its points, this one is of greatest interest and importance to the IMO -- is that the process by which interconnection reliability operating limits, IROLs, are derived, must be standardized in an auditable manner, so that a common understanding and application of IROL is reached in the industry.

And lastly, Point G, the IMO believes that followup should be an integral part of any audit review, and that formal followup mechanisms must be instituted in the readiness audit process, so that both identified deficiencies and the means by which they are corrected, are tracked.

Those are all of IMO's comments at this time, thank you.

CHAIRMAN WOOD: Tim, how is IROL dealt with today?

MR. KUCEY: I'm not an authority on that. Probably Mr. Hilt could give you a better definition of how that is done.

MR. HILT: Within the NERC operating manual is a definition of what's called an operating security limit. There has been some confusion in nailing down that definition as to when is someone exceeding an operating security limits, so there has been some work to further define it in our new standards process, and the term is
being called interconnected reliability operating limit. That's being developed in the current standards development process, with very much industry input, so, as we move forward, we certainly don't disagree with the IMO, that that needs to be very clearly defined, but it is moving along the way.

CHAIRMAN WOOD: Would that be Version 0 or Version 1?

MR. HILT: It would be Version 1. Version 0 is a translation of existing standards.

MR. McCLELLAND: Thank you. I have a few questions for the panel. I'd like to start with you, Dave. Something that you mentioned that we've seen and struggled with as far as putting in our presentations for later today, in fact, as many panelists as could stay for the presentations, we'd appreciate that -- a lot of the points that you've hit, we've noticed also, and we'd like you to see if you either second those comments or further refine those comments for us.

But I question I have is, immediately after the blackout, volunteers for participation in the audits were pretty easy to come by. As the audits have continued, we've noticed that it's been more difficult to find volunteers.

Is this a general trend that you've noticed also? Are you in agreement with that? And if it is a trend, how
do you propose we address it?

MR. HILT: I guess the enthusiasm following any major event, tends to wane. It's a matter of keeping people's focus on the right items. Just general requests that we have sent out for volunteers, while we continue to get them, we've seen probably fewer responses.

We just recently went back and raised the ante a little bit. We've not gone to the CEO level or needed to do that yet, to obtain volunteers, but I think we are certainly working to continue to have good volunteers.

When we went back through the regional managers with a letter from our Senior Vice President, volunteers appeared. I can't say that the industry is not supporting us at this point. If they don't, I think we have some other avenues to twist a few arms, and have volunteers come along.

I think this conference certainly helps by pointing to the value. We've heard a number of panelists today talking about the value, not only of their audits, but of participating in the audits and the things they learn, the value that comes back to their company by participating in the audit.

MR. McCLELLAND: What I'm hearing is, it's not just bodies, but we need competent, qualified folks on the audit. If we can help in any way with that, don't hesitate to contact us.
MR. HILT: We certainly appreciate that.

MR. McCLELLAND: I have another question and this would be for Steve. You mentioned that the standards are vague or at times, undefined. Can you provide a specific example? We have some specific examples that we'll cover, I believe, in the next panel, but from your opinion, what would be a couple of good examples for the audience?

MR. WILLIAMSON: Let's talk -- I guess, let's start with compliance, versus the audit, as we're moving into our normal compliance audit. We have standards there, and those standards have evolved into Version 2 or Version 1, so that, I think, with time, we will have more of the compliance pieces there.

Inside the readiness audit, I guess I'm not asking for standards, as much as I am asking for clarity. I think we just need, as this evolves into asking questions relative to the group of generators, there's lots of things, lots of information that you just didn't have there in the past.

We just need to get that honed down, so we know what we're looking at, so that the information is there and people maintain that. I guess I'm really talking about just clarity of intent, as opposed to standards.

MR. McCLELLAND: Thank you. At this time, I'd like to open it up to questions from anyone at the table to
any one of our panelists.

MR. FARROKHPAY: I think Scott mentioned this issue of questionnaires sometimes raising issues that might be a surprise to you. Looking at some of the questionnaires in the West, the folks in the West seemed to be a lot more forthcoming with their issues and problems, and they used the questionnaires to air them out and resolve them, actually, and it's very helpful to the audit teams.

I haven't seen nearly that level of responsiveness from the folks in the East, and I'm wondering if there's a process issue or a cultural issue or what it is. How can we get the Eastern folks to open up and bring out the issues so that the audit team can deal with them?

MR. NEEDHAM: I might offer a contrary suggestion, that perhaps others could learn to communicate better ahead of time.

(Laughter.)

MR. NEEDHAM: And really being aggressive in working out those issues before they come up in an audit process. It's been our experience that when something has bubbled up in an audit, it should have been addressed many, many months beforehand, usually.

MR. FARROKHPAY: Do you think that the fact that in the West, they send out the questionnaires, the response to the questionnaires, to the company being audited, makes a
difference? I think that in the East, they don't get the response; the company that's being audited, doesn't get to see the questionnaires.

MR. BERNARDSON: I have a partial answer, why it works that way in the West, because we've been doing audits for some time in the West. Before audits, there's always a questionnaire.

Perhaps they're just more accustomed to using it, and maybe thicker-skinned, too. I don't know, but I would rather find it out. In some of my neighbors' questionnaires, there were comments made that some of them didn't make any sense, and that some of them, I wasn't aware of, but I would rather get them there than not get them at all.

I don't know what the answer is, but I don't think they should be discouraged.

MR. LUONG: I just to follow up on Saeed's question about the neighboring questionnaire. You mentioned that one of the control areas brought up one of the issues that AEP was not aware of, and it took AEP just the next day to clear it up.

Do you think that's a positive outcome from the survey?

MR. MOORE: Absolutely, it's a positive outcome.
It's something that needed to be cleared up, got cleared up. I guess the concern or issue that I had is that it took an audit process to bring it up, something that needed to be fixed.

Had it been brought to our attention, it would have been cleared up earlier. I guess AEP took the audit very seriously or the review very seriously, and the recommendations that came out of that review.

Basically, it wasn't put in writing, but I was told that we were going to pass this audit, no matter what, and we're going to make sure that anything that we need to do, gets done.

Of course, I think that we have followed through with that, but the audit team who audited us, felt compelled. They said, we've got this issue. You've already cleared it up, but we're still going to have to put it into the recommendations.

So, basically, it's in the recommendations in the past tense. That's my concern, something that needed to be taken care of, got taken care of, but the process to do it, I don't think was the proper process.

Now, if it was an issue that they had brought to our attention before, and for some reason, it did not get resolved, if there's a technical issue or something else and it hampered reliability, most definitely, that's what the
audit process is for, to make sure that reliability is maintained.

If, for some reason, there is an issue between control areas that has not been resolved after working on it, and this could be raised to the awareness of those involved, then it should be brought up.

Third parties should look at that, which is the audit team, and say, this just needs to be cleared up, and this is maybe how it should be cleared up. I think it is very important, as a process.

I've been involved in many control area certifications, having set things up in ERCOT when they had many control areas a long time ago, so a neighboring control area questionnaire is very important, but that's to make sure that things are adequate, technically, or that there's issues that have not been resolved. But if you get a third party, albeit an audit team who reviewed that and said, let's get this done, it's important.

I think the questionnaire needs to be written, such that if an issue is brought up in that, there should be a followup question of have you brought this to the attention of the control area being audited, and what was the difficulty in not getting it resolved?

You need to have those followon questions, that I don't believe were there currently. That was the issue.
MR. WILLIAMSON: Let me make a comment. It could be concluded, I think, from our comments, that we have made, that there is a growing or serious problem with the control area and the control area communications.

There probably are some of those issues out there, but let me give you an example of how that's not necessarily a problem: I think all of you know about the hurricanes Florida has gone through just recently, and there's a lot of activity that had to take place between the Southern Control Area, the Southern Security Coordinator and his counterpart in Florida, to do a lot of things, to be able to maintain a reliable system during the time when you were losing generation, when you were losing load, when you couldn't anticipate what was happening.

You had some nuclear requirements you had to adhere to. That was all done because of the relationship and the coordination. It was a coordination agreement, but it was more than that.

It was the personalities involved and the desire to maintain reliability. That same thing happens -- and, again, I'm going to focus on Southern. It's a big area, but if they have an ice storm in the Carolinas, the same kind of thing happens.

I guess I get a little concerned that someone might conclude that these folks are operating so isolated
that they don't talk to each other. I'm telling you that's
not the case.

CHAIRMAN WOOD: Did any of you all companies -- I
guess they've all been through the audits, otherwise you
wouldn't be here.

Was there anything that came out in the audit
reports, again, because we're focusing on the process on
this panel -- was there anything that came out of the
published reports that was a surprise to you, for one reason
or the other. Scott?

MR. MOORE: There was one issue raised in the
ECAR region concerning the definition of firm energy.
Basically, if you're looking at the control area, the
definition of firm energy can impact how you count reserves.

Is firm energy with reserves? Without reserves?
How many? How much reserve do you have to have on the
system?

The audit team, as they were discussing this with
our commercial operations folks, who actually run the
generation side of our control area, the issue came up that
there's not actually a clear definition of firm energy, and
how people count that energy in their daily plans, varies
from control area and from region to region.

Some areas are very specific in their definitions
and what can be counted in our plan as either non-firm or firm energy, and how that affects the reserve levels, which directly impacts reliability from a capacity standpoint.

This issue got raised within AEP's audit. Let me back up a little bit. AEP's audit involved both our SPP and ECAR control areas, so it's kind of like a double audit.

But mainly the issue was raised in the ECAR control area. One of the recommendations was that we should work with ECAR to get a clear definition of firm energy. That was the recommendation of the audit team.

Although AEP agrees with that, it's not really within our capability, and so if we ever come to a follow-through and we come to a check point and you get your report card, it's going to come down to that item.

Unfortunately, I don't think AEP will ever be able to get that one checked off. At some point, if somebody does compliance against recommendations, AEP could potentially always be out of compliance.

I thought that although AEP agreed with the intent, we are a little bit surprised that their audit team, in our recommendations, would put something in there that was really more a regional or Eastern Interconnect problem that we could potentially be held accountable for.

I'd term that a surprise, just the way it was done.
CHAIRMAN WOOD: Anybody else? Bill?

MR. PHILLIPS: We had audits of both our facility in Indiana and also the St. Paul facility in Minnesota. In both audits, the issue of the authority of the reliability coordinator came up.

In the judgement of the readiness audit, we should have written, signed authority from all the entities under our reliability coordination. We don't disagree with that requirement, but we felt it was a subjective judgement on the part of the teams, based upon the then-current policy in line with NERC.

We objected to the fact that the requirement was expected of the reliability coordinator, as opposed to the operating entities that seek reliability coordination services from the reliability coordinator.

We also objected to the post hoc basis in which it was applied. We firmly support the idea; we just believe that it would be better if it was actually a NERC standard, a standard form, a standard statement, so that you don't have any inconsistency across the interconnection as to what those arrangements are.

CHAIRMAN WOOD: Do you mean a standard of Policy 9 that says specifically, what --

MR. PHILLIPS: Policy 9 does not specifically require a written authorization committing the operating
entities to a reliability coordinator or the authorization
of the reliability coordinator.

Policy 9 simply says that all entities shall
abide by the authorities of their reliability coordinator.

So the issue became one of what do we have in writing,
authorizing us to have authority over these entities?

CHAIRMAN WOOD: Dave, is that on the schedule
anywhere, or where does that fall; do you know?

MR. HILT: I think these are exactly the kinds of
issues we need to bring out in these audits. Certainly, if
you're an auditor and you're standing in someone's shop and
you say, do you have the authority and he says, yes, well,
show me your authority. Where do you derive your authority?
I need to see that in a document. I need to see that in
writing, I need to see that somewhere.

We believe that certainly it's a best practice to
have some very clear lines of authority in documentation to
support that. That may well be, as Bill suggests, something
that needs to now become a standard, as we learn some things
from these audits and we begin to monitor for compliance, as
opposed to, in terms of, is it best practice for readiness?

MR. McCLELLAND: Dave, isn't the plan to be
addressed in the functional model that NERC is preparing?

MR. HILT: Certainly, to some degree, but even as
a reliability coordinator or a reliability authority or
however the case may come out in the functional model, there
will need to still be some clear line of authority to direct
actions of balancing authorities, transmission operators, et
cetera.

The form of that is the question, I think, that
is at hand here. Do we need to standardize the form of that
authority?

CHAIRMAN WOOD: Any other surprises, just to wrap
up my question?

MR. LARCAMP: Before we leave that, who is going
to define firm energy? If ECAR is not, I don't think we
should leave that hanging here, if it's affecting reserve
calculations.

So if ECAR is not, is NERC going to? Is FERC
Staff going to facilitate that resolution? Who is going to
do it?

CHAIRMAN WOOD: Why doesn't PJM do it?

MR. MOORE: Basically, I was going to address
that. We're evolving into markets. The markets basically
facilitate either -- there is no need for the definition, or
if there is a need, based on market design, it's within
those business rules.

ECAR, unfortunately, asked part of its members
and PJM, who were following those market rules, and part of
its members in MISO and part of its members, wherever else
they were -- where you have markets or developing markets,
the rules are a little bit better defined.

So, that's another issue for AEP. Come the first
of October, it's going to be a non-issue for us, because the
market is going to define how that works.

So, it's hard for us to get ECAR to move forward
on a definition. A lot of it, unfortunately -- we have
markets in some areas and don't have markets in others, and
different regions have taken different perspectives on how
they write the rules.

SPP, how you treat firm energy, it is defined
within the criteria of SPP, so that's very clear. That
issue was not raised for our control area. That's the
Southwest Power Pool.

In ECAR, I'm not sure how we're going to address
that. For those companies joining PJM, it would be
addressed, but those companies joining MISO, once they get
their markets up by March of 2005, hopefully, I think it
will be addressed.

I can't really answer for the other regions. I
think it's just an evolving issue, as we're in the
transition period.

CHAIRMAN WOOD: I know that there have been
discussions about the fact you've got MAC, ECAR, MAIN, MAPP.
I know that's not the focus of today's hearing, but what's the latest thing on the consolidation and all of that? It makes a lot more sense.

MR. MOORE: I can only speak from the ECAR standpoint. The Executive Board had some discussions about forming a super reliability organization of those four groups, so there are discussions at the high levels amongst those four regional organizations.

I think there is a good intent to move forward, but that's a process that's going to take a little bit of time. I think there's a lot of support for that, and I'm sure that there's folks who are in disagreement.

I think it is moving forward and probably will get a little bit more visibility in the very near future.

CHAIRMAN WOOD: Fixed by the time the energy bill passes, because we need to kind of move on.

MR. McCLELLAND: All right. We don't have Phil Donohue here today, but we do have Sarah. The audience has been sitting patiently. If anyone in the audience at this time has any questions for the panelists, we would appreciate those questions.

MR. VEGAS: Chuck Vegas with TVA. I'd just like to reiterate something mentioned earlier. One of the main focuses that needs to come out of this process is that a practice -- you know, a lot of the readiness review was
focused on minimum requirements, so to speak.

What we really need to focus on is how we can share best practices among the different control areas.

CHAIRMAN WOOD: David, what is the process? Everybody is reading the document. I would say, for maybe our staff, see what they find. The documents sometimes avoid a lot of the, I guess hot points or low points of compliance. You can meet the minimum standard, but that's it. I think it's the bell-ringers that we want to throw a lot of spotlight on and drive the excellence in this industry.

MR. HILT: We began to look at how to do that. Obviously, we've just now posted 23 of the reports and how you begin to pull that out of there and take a look at that.

The teams have made some observations in those reports as to what are the best practices, and they have made some specific references to these particular areas that are best practices.

We think we need to have potentially some review of that through our technical communities to take a look at that and essentially publicize a list, if you will, of here are some of the best practices.

They may not apply in all areas. For example, things that are best practices in Jack Bernardson's area in the West, may not apply in the Southeast. We just don't
know, but we think there should be a list of things that we have identified out there that are the best practices.

And, as Scott has said, his organization can look at those and decide, on their own, whether some of these apply and whether I should be implementing them in my own organization or not, or whether they don't apply. It's a process we're just now beginning to look at. I'll talk about that a little later in our process improvement section.

CHAIRMAN WOOD: One that has come out in number the reports is a discussion about a state estimator. I don't remember how many of you all have actually operating state estimators in your systems.

(Show of hands.)

CHAIRMAN WOOD: All right.

MR. MOORE: I take that, Mr. Wood, with a grain of salt. You're looking at some of the largest and best operators right here.

CHAIRMAN WOOD: If you all do, you know, I will say that one of the things that falls out of these audits, you know, that inform the lay reader, is, in this brave new world, maybe some of these control areas don't really need to be around.

Basically, there will be a level of sophistication and investment that's required to be made to
meet the reliability standards and to meet good practice and
to keep up with the best practices that have come out of
these audits.

For some of these folks, it's just not going to
be economical or it's not going to be practical for them to
continue to be invested with this much responsibility from
NERC. I don't really know if they are up to it.

You're right, we are talking about some of the
cream of the crop here. But I don't mind that that begin
now, because we really don't need to have any Achilles Heels
in the grid.

MR. MOORE: I agree with that, and I normally
wouldn't respond right now, but since I'm going to be
leaving, I'd like to respond to that.

I tend to agree with you, and as Bill has
mentioned before, in the last 20 years, as we have developed
the operating policies and planning standards, quite often
we came to the lowest denominator in order to set the bar
level, which is not where we need to be.

And because basically, a more specific example is
in training. And that is, we were trying a few years ago to
bring up operator certification and bring up training
requirements. When you go to vote in committees, you know,
things tend to get voted down, because they aren't
economical, especially for the small players.
And I agree with you that as we move forward, that there are a lot of people who should not be operators, unless they are willing to make the economic decision to do that, and a small operator probably can't do that.

I would caution you, though -- and you've heard me speak to this in relation to the blackout technical discussions -- is when you start removing some of the smaller players, and you move things either to an RTO or to larger control areas, that's a good thing. You get the wide area view, but we also need to remember there's another concept called defense-in-depth, that you have to have a second, and you are well aware that as AEP is moving into PJM and a lot of the functionality, quote/unquote, will be PJM's responsibilities, that AEP still has a responsibility to monitor its system, its whole system, including our 765, so that we do have that second set of eyes.

And that takes a financial commitment. And so, as we move to the RTOs, that we have all the functionality, either RTO or ISO, that have that wide area network, to make sure that they have that functionality. Let's not lose sight that we need a second pair of eyes focused, as well, on the smaller scope, but with the same set of tools that the larger folks have. Remember defense-in-depth.

CHAIRMAN WOOD: That's a good point. I think the realization we've got, certainly as regulators working with
the states. We're going to be responsible for paying some
of this, too. Recognize that the cost of what we're talking
about here is not just consolidation. It's an incremental
investment, not just yours, that needs to be made for the
well being of the grid. A double set of eyes is certainly
part of that.

MR. MOORE: Thank you.

MR. PHILLIPS: Chairman Wood, if I might add, in
support of Scott's statement, sometimes we confuse control
areas with local control centers. Although I do suggest
that the number of control centers that we have in the
interconnection is greater than we need, I would also
cautions against the assumption that we would get to the
point that we would only have the RTOs as control centers.

There are lower levels of voltage in the
transmission system that require monitoring, lower levels
than we would normally expect the RTOs to be monitoring on a
detailed basis. And there is a purpose for smaller control
centers, control areas.

CHAIRMAN WOOD: As long as this is clear -- and
this is true in the West and the East and in ERCOT -- as
long as it's clear, who is in charge and who can call the
shots in an emergency.

I was troubled by the question you raised in your
comments, in your written comments that we talked about and
questioned a moment ago, about the written authorization issue. If push comes to shove, it ought to be absolutely clear that the reliability coordinator can call the shots and that everybody has to jump and they've got to jump in this much time or there are severe consequences for not doing it.

MR. PHILLIPS: Let me very clear that there's never been any question in our minds at the Midwest ISO, that we have the authority and that our participants have always followed that direction. It was a surprise to us that it came out as a written requirement in the audit.

It was not a problem with respect to our transmission owners, those members of the RTO, because they provided that in writing as part of the transmission owners agreement. But for other entities under our reliability coordination, we were doing that through agreements with MAPP or ECAR or other avenues.

CHAIRMAN WOOD: David?

MR. HILT: On this issue of where AEP is heading and looking to become ultimately a transmission operator, and will no longer be a control area, we believe, certainly, that we need to work cooperatively with the RTOs and the Councils as well in terms of continuing to do audits of those control centers.

It's an issue we've raised that we're going to
pursue. Certainly, in your former territory, there are some very large local control centers beyond the ERCOT control center.

We think we need to be able to cooperatively take a look at their preparedness and readiness as well. I certainly agree with Bill, you know, on the issue of these authorities and other documents.

They're clearly best practices. That's what we're trying to accomplish with the readiness audits. We're trying to go beyond just compliance with the standards and essentially raise the bar.

If we always try, if we're monitoring compliance with standards, as the compliance portion of the program -- and there's too many actions that take place, potentially, most legislation -- here we're looking for achieving excellence.

Some of the things that we find in these audits may well need to become standards, that there will be ultimately the potential for punitive actions, should they not comply with those standards.

CHAIRMAN WOOD: Sounds good to me.

MR. McCLELLAND: A quick question for the panelists: Were you folks aware that FERC had produced a document that was entitled -- or where the subject matter was best practices for IT tools, and have you seen that
document? It's kind of a split vote. How many have seen it and are aware of it?

(Show of hands.)

MR. McCLELLAND: You'll see it again this afternoon.

MR. LARCAMP: Ask them if they want copies of the document, Joe.

MR. McCLELLAND: We can make those available. In the past, we undertook a study and put together recommendations for best IT tools.

Any further questions?

(No response.)

MR. McCLELLAND: There's an audience question in the back -- actually two.

MR. KOPMAN: My name is Stanley Kopman. I work for the Northeast Power Coordinating Council as Director of Planning and Compliance.

I've been listening to the discussion, and one of the points I'd like to make, in reference to a suggestion made earlier regarding the makeup of the audit teams, that it should become an independent NERC function.

One has to recognize that these readiness reviews were set up as joint leads between the regions and NERC.

There was a reason for that.

The Regional Reliability Council and the members
of the NERC have been working directly for a number of years with the control areas, monitoring not only their compliance, but also their readiness to be able to perform their functions. As such, I think it provides a very strong interface between NERC and the control areas.

I think that's something that can't be lost in this process. As a member of NTCC, I participated in a couple of the readiness audits.

I thought that we provided something that was important. We provided a viewpoint from a regional perspective, and we provided the expertise and a number of years of experience in working with control areas, and we were unable to work with NERC in that co-lead role, very effectively. I'd like to see some reference to that.

I am going to suggest that I prepare comments in that light to the Commission.

MR. McCLELLAND: Thank you.

MR. GOLD: Mike Gold from Southern Company. I'd like to go back a minute and talk about the reliability coordinator. It's called the reliability coordinator today.

It was a security coordinator in 1992 when NERC sent out the initial questionnaire, and it was an audit, that you would file a plan with NERC and it would go to a committee, and that plan would have to be approved. It was
posted on the NERC website.

That plan did require that you had authority, that the security coordinator had authority. The reason why is because I could not get authority from the Southern Subregions at that time, filed it back with the regional members.

They said, I won't give you the authority in order to get off of Thanksgiving, because I want it off, just like everybody else did. I wrote in the plan that I had authority and filed it back with NERC.

When I filed the initial plan, NERC sent it back and said it didn't meet the compliance of the audit. So, I had to put that in. So I'll take a little bit different stand, saying that there was a requirement in the security coordinator in 1992 to achieve that authority, whether you go forth and get it or not, which is, by the way, in Southern's position.

The members that spoke back to Southern said, we would be the security coordinator, because we have the capability and the load flow. We had the state estimator, and it was obvious that we could tell the meter that information and provide a wide area view.

The other members said, prior to me joining that, I would require to have a document written, so we had to develop a security coordinator operating committee agreement
that was documented and filed with NERC.

The other issue I'd like to point out is, it does no good to have compliance, if you don't follow it. We had NERC policy, we had NERC procedures prior to the blackout. If you go back and look at those, the implementation of those could very well prevent a blackout, could very well take action to either stabilize the situation or prevent it.

But if you sit and do nothing, even if you give us a compliance requirement and it's in hand, if you're not going to implement that or you don't have the tools to allow you to know what's coming, the inevitable is going to be there anyway.

MR. DANIELS: Howard Daniels from SunPoint Energy in ERCOT. One of the things that I would like to have seen in the readiness audit is the focus on the market participants and how they are adhering to the rules, particularly in the area of reactive management.

It's one thing, looking at what the region is doing and the tools they have, the capability of the tools, but in the area of reactive management, there is an issue of how well are generators supplying reactive, how much effort is expended to get them to do what they do.

What is the real capability on a day-to-day basis, of the reactive operator or their units? To me, that's a reliability issue. It should be captured as in the
reliability readiness area, and is certainly a non-trivial
issue in the marketplace.

CHAIRMAN WOOD: This came up with Tim raised the
issue they were interested in looking not just at the TOs,
but the other market participants. What would that entail
to do, David, to actually look at the participants in the
entire region, as opposed to just the operator of the grid?

MR. HILT: From our perspective, certainly, it's
conducting additional audits and finding -- we'll talk about
that a little bit in some of the changes, as we go forward,
with regard to the functional model, literally going deeper
into the organization.

Today, we're starting with reliability
coordinators and control areas who have some level of
responsibilities, even to assure that those folks are
providing the resources and reactive resources under
contracts, et cetera.

But as we go to the functional model, we'll be
looking to go deeper, looking at other entities as a result
of identifying who is responsible through the functional
model for those activities, and to audit where those
responsibilities lie.

We've certainly had to do some of that with some
of these audits where we discovered we couldn't do this on a
single site and complete an audit; we had to go to some
other sites and completely close some of the loops.

I think we do need to do some more of that and go
a little deeper.

MR. McCLELLAND: I think that concludes the first
panel. Thank you folks for your participation. Please
feel free to stay. You may join the audience.

Our second panel reviews the good and the bad
that we found in the audits. These results are compiled in
terms of categories such as security, backup control
centers, tools, et cetera. They are an important indicator
of the current state of readiness of the nation's bulk power
supply.

We'll begin with introductions from Brendon Kirby
and John Kueck. Fellows, as soon as you get situated, if
you'd introduce yourselves, and, Rich, I guess you're
sitting in for Dave Hilt, so we probably better do
introductions with you, also.

CHAIRMAN WOOD: Before we do that, let me welcome
the Chairman of the Independent Board of NERC, Richard
Durant, who is here today, and the General Counsel, David
Cook. Welcome back. We're so glad to have you all here.

MR. McCLELLAND: Rich, I think we'll begin with
you. If you would just introduce yourself and state your
organization?
(Introductions made.)

MR. McCLELLAND: Okay, folks, Rich, we're ready to begin.

MR. SCHNEIDER: I do have a presentation prepared.

(Slide.)

MR. SCHNEIDER: You've heard Dave Hilt mention several times this morning that we've done a number of readiness audits. We've published the results of 23 of them on our website.

I want to discuss the findings of those audits at a relatively high level.

(Slide.)

MR. SCHNEIDER: As you've heard from many of the participants this morning, there is significant value to both the audited entity and the individual team members, right from the start.

When we scheduled these audits, we sent out a notice that we're going to conduct an audit. The entities do an internal self-review and identify a number of issues, many of which, I believe, have been addressed before we even arrive onsite.

Also, there are a number of team members who have been back to us and told us that in the process of doing the audit, they've seen a process or a procedure that they felt
their company would benefit from, and have brought that back and implemented it, so early on, we see there is benefit to the various entities.

(Slide.)

MR. SCHNEIDER: Most of the entities that we audited, we found were generally ready, not only to perform their duties and responsibilities on a day-to-day basis, but also in the face of emergencies. Some of them have, in fact, demonstrated best practices, and also on the other side of it, some of them have shown need for improvement in various areas such as training, backup control facilities, the documentation of operator authority and responsibilities, real-time monitoring, the monitoring of reactive reserve, and the disseminating of procedure and policy updates to the operators in a timely fashion.

There are six or seven items listed here. I could go through all of them, however, I have chosen three to discuss here now, and as it's been pointed out, the reports are available.

The first area is in training. The requirement is that control area operators must be well trained, so that they can perform their duties and their roles in an effective manner.

The control area must have documents in place that outline the training plans for the operators. They
must maintain the training records for the individuals on
the staff, and make those records available.

We have found that several of the training
programs do, in fact, qualify for best practices. On the
other hand, we feel that training is an area that needs
improving in about two-thirds of the entities audited.

Some of the best practice concepts that we've
identified, would include allowing adequate time for the
training, having excellent resources available, the use of a
training simulator, having a dedicated staff of trainers
with outside expertise used for special topics that need to
be taught; requiring trainees to achieve 100 percent test
scores on a module before allowing them to proceed to the
next higher module, and not allowing system operators to
take vacation time during scheduled training days.

There are others on the list, but I am not going
to go through all of them.

Planning is another area where control areas must
have a process in place, not only to do next-day planning,
but also longer-term planning, and we found that most of the
entities did have adequate planning programs in place. Some
even ranked as best practice. Some of those practices were
a control area that uses an N-minus-two contingency analysis
in order to ensure restoration of operating reserves for
both transmission and capacity constraints;
The establishment of a real-time system analysis shift position, using control room operators; a look-ahead process that includes contingency analysis, reserves, and unit commitment.

Loss of the control facilities is a big area. The control area must have a workable plan in place to continue to perform its operations in the event of a sudden, catastrophic loss of the primary control center.

What we found was that there were some outstanding facilities and plans in existence, but, again, about two-thirds of the entities did need improvement in certain areas such as adding functionality, adding redundancy or additional procedures, and a few, in fact, had no backup center at all.

Again, some best practices were identified: A facility that is seismically designed and tornado-proof; having a backup center that is an exact image of the primary control center; an infrastructure that has redundant computer system and power supplies; and the backup systems are driven by computers that are house in an alternate facility; and testing the backup facility quarterly, using unannounced evacuation drills.

Our basic goal, as you have heard, in these audits, is to achieve excellence. We feel that in each audit cycle, we will raise the bar so that the second audit
is different from the first, that the third is different from the second, et cetera, and we see a lot of this coming about by identifying these best practices, cataloging them and disseminating them to the industry so that the industry, in turn, operates to a higher level. Then we go around and repeat the cycle again.

MR. McCLELLAND: Rich, if I can interrupt just for a second?

MR. SCHNEIDER: Sure.

MR. McCLELLAND: That comment intrigues me. What would be the incentive for the industry to operate at a higher level, absent mandatory standards?

MR. SCHNEIDER: Well, I think part of it right now is that all you have is peer pressure, that you've heard comments about comparing to one another, report cards, with AEP saying they'd like to go through the list and compare themselves to the list.

And really all you have right now is the peer pressure.

CHAIRMAN WOOD: Do we give them enough information in the audit reports, so that the peer pressure works? I mean, that's where I was going with -- you know, they are kind of bloodless when you read them.

I think you can get out of here that where people have not kind of met the minimum standard, and I think that
in a few of the reports, the best practices are clearly shown upon, but I'm talking about in between where people are over the bar but not by much.

MR. SCHNEIDER: Right.

CHAIRMAN WOOD: There's no indication -- I mean, the staff tells me a whole lot more from, you know, from who was looking stronger than what -- and maybe it's not fair to have just a lot of impressions be down on paper, but if in this kind of transition era, we're not going to have mandatory compliance yet, because we don't have the rules finished and we don't have the hammer, the peer pressure is all we've got.

So, I know there were probably three reports that were markedly lower than the others that I've seen, but it's the in-between crowd that could stand to get the nudge.

MR. SCHNEIDER: I think part of that is our experience. The first batch of audits, we saw, we weren't sure what was out there, and I think as we move forward --

CHAIRMAN WOOD: You can test that.

MR. SCHNEIDER: Hopefully we will -- well, not hopefully; the reports will become more crisp and more clearly defined.

CHAIRMAN WOOD: As we push best practices, though, are people going to be -- if they are not mandated by NERC, but just kind of the spotlight shown on them as
best practices, good ideas, better practices, are regulators other than us going to have trouble saying, well, that's the cost that you ought to be including in your rates and get recovered, if it's not a requirement, but is just a good practice?

MR. SCHNEIDER: Well, I think you have to emphasize the benefits of the best practice, and, you know, if you're not operating to that level, some of the things that can happen as a result.

You do need the mandatory practices, the mandatory standards to go along with it.

MR. McCLELLAND: Another question, not to double-team you, but to double-team you, when you consider the reports themselves, and you can look at a variety or reports, and consider some that have not done so well and others that probably come through with an A-plus, the Executive summaries -- and this goes back to an earlier point that Dave made as far as who is the audience, legislators, regulators, state regulators, et cetera, when one compares the executive summaries from report to report, there usually isn't much substance there, other than congratulatory remarks and, you know, a high-five, if you will, for the entity.

Any plans to address that as you move forward?

MR. SCHNEIDER: Yes, you know, Dave will get into
this more, moving forward. We're in the process of hiring full-time audit team leaders, and we'll provide training and an element of consistency to all of that.

MR. McCLELLAND: Thank you.

COMMISSIONER KELLY: Richard, how do you determine best practices? Did it come about as part of the audit, after you saw things and you said, that's the best? Was it a preexisting notion?

And when you say "best practices," is that a cost-benefit conclusion, or is that a best conclusion?

MR. SCHNEIDER: Well, I'll say what I read here - - I'll characterize many of them as candidates for best practices. And it's an impression of the audit team, it's an impression of the NERC staff right now, and I think that's where we do need input from the technical community to say it really is a best practice, and not my opinion or Dave Hilt's opinion.

In some cases, there can be a cost-benefit to it, yes.

COMMISSIONER KELLY: Well, when you say "best," you mean a cost-benefit, you don't mean that's the best that can be done? Or do you mean that's the best that can be done, regardless of whether that's --

MR. SCHNEIDER: Well, I mean, that's the best that can be done.
COMMISSIONER KELLY: Okay.

MR. SCHNEIDER: You asked if there was a cost-benefit that was associated with it, and there may or may not be.

COMMISSIONER KELLY: Okay.

Regarding authority, it seems to me that one of the most important aspects of reliability is the system operator having authority to take action, particularly to take action immediately. That was part of the problem with the blackout.

Half of the entities don't have good documentation that they have authority. Is there a followup plan on that?

MR. SCHNEIDER: Well, with all the recommendations, there's a followup plan that those recommendations be tracked. It's being developed by one of the NERC subcommittees, but it will be turned over the Compliance Enforcement Section of each region, with NERC oversight.

Specifically with regard to the operator certification, yes, that's something that we, too, are very concerned about back at NERC. I think, in almost all cases, the operators have the authority, but the documentation that gets the word to the operator that says, yes, you have the authority, I think that's what's lacking.
And some of the things we've seen in that area as candidates for best practices, may be a statement that's signed by an officer of the company and it's actually on the control room wall, or it's in their job description, some sort of corporate backing, and it's given to the operator.

COMMISSIONER KELLY: So, at the moment, the entities that you've audited, don't have an obligation to report back to you on response to deficiencies?

MR. SCHNEIDER: The process has not been completed; that's correct.

COMMISSIONER KELLY: Okay.

MR. SCHNEIDER: Many of them have, but the problem with that is that it hasn't been validated. They say we've done this and we've done that, and I'm not saying that they haven't, but there's no validation in a lot of cases where we've gone back and seen that it's been done, and that's the formal process we're looking to develop.

COMMISSIONER KELLY: And now those results are going to be handed off to the reliability coordinator within whose region the entity --

MR. SCHNEIDER: The compliance group within each region, yes.

COMMISSIONER KELLY: The compliance group, okay.

MR. SCHNEIDER: There will be NERC oversight of that and reporting back and forth, and eventually followup
visits to the site, if required, to validate.

MR. McCLELLAND: So, absent the passage of mandatory reliability standards, as far as followup and enforcement, again, it reverts to peer pressure?

MR. SCHNEIDER: Yes.

MR. McCLELLAND: Thank you.

MR. SCHNEIDER: Unless it's an outright compliance violation, yes.

MR. McCLELLAND: But the readiness review audits are not compliance?

MR. SCHNEIDER: They're a different process; that's correct.

MR. McCLELLAND: Thank you. Sorry for the multiple interruptions, Rich. Pick it back up again.

MR. SCHNEIDER: I said, you know, that we have to catalog and communicate this information to the industry. I think we've accomplished a lot in the last six to eight months, given the short implementation timeframe that we had, but I think we'll continue to improve the process as we move forward with industry input. Thank you.

MR. McCLELLAND: Thank you.

MR. SCHNEIDER: I'm done.

MR. McCLELLAND: Quick question for you: On the reports themselves, have you circled back with the folks? Again, these were identified by Dave, in his prior
Have you circled back with, say, the regulators and legislators and said, hey, here is our report, how readable is it? Can you understand this report? Do you know, from reading this report, whether there are deficiencies or the audit team feels there are deficiencies with the control area, the reliability council? Have you made any of those contacts?

MR. SCHNEIDER: We have not made a direct solicitation of the regulators for those comments. When the reports are published, a notice goes out. We have a "burst e-mail" at regulators@nerc.net, and for regulators that sign up for it, they get a "burst e-mail" announcing that they can go and get them.

Actually, I get a lot of comments back that say why are you sending me this? Because you subscribed to it.

(Laughter.)

MR. SCHNEIDER: I guess that if it's not in their state or a neighboring state, they -- but of those that have received it, I, personally, have not received any comments back on them.

MR. McCLELLAND: Thank you. Let me consult my agenda. Oh, Brendon's up next. So, next are specific issues that we have identified while conducting the audits. Included in this presentation will be items such as
variations in security, backup control centers, tools, et cetera, and these are important items when you consider the reliability of the nation's bulk power supply.

Brendon, I believe you have specific examples to help illustrate your point, so at this point, I'll turn it over to Brendon. Thank you.

MR. KIRBY: Thank you. I think I've got -- there we go.

(Slide.)

MR. KIRBY: These are looking at both the strengths and the weaknesses. The examples of areas include the tools, operational practices, backup centers, backup center training, wide-area view, security.

As has been said repeatedly today, there are no definitive standards to measure against, so as you're going through the audits, much of what the auditors have to do is necessarily subjective.

(Slide.)

MR. KIRBY: Looking at tools, there are quite a few tools the system operator needs. Some of the most important include: Real-time state estimation, which tells you the current condition of your system; online contingency analysis that tells you how your system will respond in the event of the next event; alarms that are prioritized as to how important they are; suggested remedial actions to give
an operator a suggestion as to what should be tried to
remEDIATE an upCOMING contingency; AND tools for monItorING
the condition of the energy management system.

Frank Macedo produced a tools catalog, produced
at the July 14th software conference. You see a tremendous
range in the tools that people have. Some folks have all
these tools that do not only online contingency, state
estimation online contingency analysis, but they're looking
at assuring that they know they will be able to restore the
system within 30 minutes to handle the following
contingency.

Other folks do not do that. They do not have the
online contingency analysis, they are running based on
contingency analysis that was performed the night before.

Prioritized alarms: Some have alarms prioritized
so that the most important alarm is brought to the
operator's immediate attention. Many do not, and the alarms
are simply presented in the order they come in, and you get
into a severe situation with a lot of alarms coming in, and
the system, the operator can easily be overwhelmed.

A few of the best have got suggested remedial
actions, where the system itself will look through the
effects that various actions could have to remediate
possible contingencies and present them to the operator.
Still, it's the operator's choice to use this material or
not.

EMS monitoring: Actually, a number of systems have got continuous monitoring of a number of conditions in the energy management system, so all the software processes are being watched and presented to the operator, who knows that all of the things he's needing in his tools are, in fact, updating.

Many do not have that. There may be a single alarm; there may be no alarms; there may be no way to know that the EMS system has stopped performing some of its functions, other than that the system operator needs to be attentive. Next slide.

(Slide.)

CHAIRMAN WOOD: On that list, would you say all these things would be a best practice that we would want to see everywhere?

MR. KIRBY: It's an interesting question. If you view best practices as something that everyone who is competent is actually doing, it's not the ultimate to be achieved. It's what someone who is doing a credible job, ought to be having. Yes, all of those --

CHAIRMAN WOOD: It's not the A-plus; it's you're doing your job right?

MR. KIRBY: Yes.

CHAIRMAN WOOD: Not defined by the voluntary
standards, but right as defined by what a group of non-
interested or interested but non-invested engineers would
say this is what we need to do to make the system work well?

MR. KIRBY: Yes.

CHAIRMAN WOOD: Would be these types of things?

MR. KIRBY: Yes, and many more.

CHAIRMAN WOOD: Okay.

MR. McCLELLAND: A followup question to that: If
an entity did not have a state estimator and you feel a
state estimator should be status quo, if an entity didn't
have a state estimator, how would it be reflected in a
report that would be filed by the readiness review?

How would that be reflected in the readiness
review report? Would it show up poorly? Would it not show
up at all? Would it be mentioned only as a recommendation?

How would it be addressed?

MR. KIRBY: It might not even be mentioned as a
recommendation. Typically, if an entity is working on
putting one in, in the experience, I think, of all of the
auditors, that would be jumped on as a recommendation to
continue the process of putting it in place and would be
included.

If it's not there and the team feels that this is
a large entity that consequently really needs it, I think it
would show up as a recommendation. It becomes very
subjective to try and say is that entity small enough that you might be able to get away without having it.

It's been my experience that teams tend to lean in the direction of being lenient or trying to give the control area a break, rather than being very rigid. It's difficult for a team, because there is no standard that says you must have this.

MR. McCLELLAND: I think that goes back to an earlier point Bill made, that, at least to some extent, it depends on the composition of the team, who the volunteers are and how strongly they feel about a particular subject.

MR. KIRBY: Yes.

MR. McCLELLAND: Thank you.

MR. KIRBY: Next slide.

(Slide.)

MR. KIRBY: This is an example of the first of five pages of a table that lists the various tools, gives them a description, and over on the right, it states whether this is minimally required, is it best practice, and it provides that kind of breakdown.

An earlier version -- and I am told that there is hope we'll be moving in that direction -- has a further breakdown that would say, for each type of entity, is the RC required, does the reliability coordinator require this tool? Does the coordinator? Does each of these entities?
Must it have the tool itself, or does it just need the output from the tool?

As I said, this is a five-page tool or a five-page list that provides a lot of depth as to listing all the tools.

CHAIRMAN WOOD: And this was used -- you said here on the prior page that the checkoff list is now included with the audit materials?

MR. KIRBY: A checkoff list is beginning to be included with the audit materials. The last audit that I was personally involved in, I think, three weeks ago, did not have that list. We provided a similar list.

MR. McCLELLAND: This particular tools catalog page is not a NERC requirement.

MR. KIRBY: There are no requirements for these.

MR. McCLELLAND: This was a recommendation by FERC, as far as what we felt the best practices were.

MR. KIRBY: Yes, this was Frank's list.

MR. McCLELLAND: Thank you.

MR. KIRBY: Next slide.

(Slide.)

MR. KIRBY: Here we look at the operating practices. There is a lot of range on operating practices.
For procedural rigor, whether you're only operating in a condition that has always been previously studied, are you able to immediately study any change in the topology of the system, the connectivity of the system?

If lines go out of service, if generators go out of service and you always have a study, it then enables you to know how the system will respond to the next event.

There should be procedures that tell you what to do, when to do it, how quickly to do it, how to know that you are into a condition that requires action. The best have got very detailed procedures that give the operator a lot of structure that says this is what I need to do, this is when I need to do it, and this is how quickly I must have it done.

Others tend to say, well, we'll deal with the problem when it shows up. We've got 30 minutes or so to handle it, once the situation actually presents itself.

A problem, of course, is, in the power system, you're looking at very improbable events. There are many, many lines, many, many buses. The chances of one of those lines tripping in the next few minutes or in the next hour is always very low, but since you've got so many of them, one will, and you need to be prepared for it to the extent to which you had a prior study. There is a lot of variability.
Next is demonstrated ability and willingness to shed firm load. That becomes one of the very important things that gets looked at in the audits. There is quite a range on that.

In the best, you see not only do people say there are only two, but they convince you that there are, and they've got a track record from the recent past that shows that, where they have been, unfortunately, faced with a situation where it was necessary, they took the action, and the action was complied with.

In the worst, we've seen people that have said -- control areas, for instance, have said, no, they would think about if their reliability coordinator told them to shed load, and if they felt it was the right decision, then they would go ahead and do it. If not, they might not.

MR. McCLELLAND: Say that again.

MR. KIRBY: There have been a number of audits where a control area would say, if we were directed by the reliability coordinator to shed load, if they did not agree with that, they wouldn't do it.

CHAIRMAN WOOD: That's in the standards today, what the relative role of the RC is; is that right, Richard?

MR. SCHNEIDER: Yes, it is. I know of one instance -- possibly two -- and I don't believe those reports have been published.
CHAIRMAN WOOD: Okay. Would that type of issue be referred to the Compliance Committee?

MR. SCHNEIDER: Yes.

MR. FARROKHPAY: Rich, I have seen a couple of published reports that have instances of where there was some doubt expressed by the team that the operators would actually follow through and shed load.

MR. SCHNEIDER: As an opinion of the team, based on day responses -- I'll put it that way.

MR. McCLELLAND: I think I know of one, Saeed. I know of one particular response. I'm fairly certain of the second, where he was actually told no, we will not comply with the reliability coordinator.

I don't remember how that was reflected in the report. You may remember the specifics.

MR. FARROKHPAY: I think the caveat was, unless they felt it was necessary.

MR. McCLELLAND: That's a no to me.

MR. SCHNEIDER: Again, I know of only two. You can fill me in later and I'll go back and read the reports, but I know of only two instances. Neither of those have been finalized and published yet.

MR. McCLELLAND: Just a quick question to Saeed: As I remember the two reports, I don't think that was reflected in the Executive Summary.
It may be because we're all gentlemen, but I think the Executive Summary pretty well gave a recommendation, glowing recommendations and flying colors, or the audit did in the Executive Summary. Is that how you remember it, Saeed?.

MR. FARROKHPAY: In at least one of them, that was the case. In the other one, I don't remember exactly. Certainly there was no failing grade given as a result.

CHAIRMAN WOOD: Did the staff auditor from our Staff bring it up in the audit report to the final drafters?

MR. FARROKHPAY: I was the staff auditor.

(Laughter.)

MR. FARROKHPAY: We've been through a number of these audits, and I think there's a lot of hesitancy on the team to come out and fail a control area, and that contributes to the fact that it's not pointed out so prominently in the Executive Summary.

It is listed as one of the items that they need to deal with in the Recommendation Section, but the Executive Summary doesn't highlight it.

CHAIRMAN WOOD: Okay.

MR. McCLELLAND: Thank you.

MR. KIRBY: The next item is the ability and willingness to move generation, to check its capability to
respond to both real and reactive power. There's a
tremendous difference there.

It's quite common to hear operators complain,
especially about IPPs, that they don't believe the IPPs are
either willing or able to respond, especially the way the
utility generation is. It's certainly a big reliability
concern, if that's the case.

There have been cases where the control area or
the RC would then challenge the operator's response and say,
you know, we do have agreements, so they must. In at least
one case, that was not reflected in the report because the
control area -- it was a combination of a control area and
RC -- felt strongly that they had that capability.

On the other hand, in the best places, there is
an ability built into the market structure, where the
operators can move generation anytime they want to. They do
it quite regularly for reactive power, they regularly test
the unit's ability to provide reactive. It's done at the
discretion of the operator, simply because, for whatever
reason, there's a concern, whether the unit can.

They can do it for real power as well. There's a
little question about who will pay for the power in the case
of moving the unit for real power.

In general, in that particular case, they found
that the market tends to move the units by itself for real
power, so they had a lot of confidence. The distinction between having operators who were just not certain that units will respond, and having structure in place, where, if you have any questions, you just go ahead and move the units, was pretty dramatic.

COMMISSIONER KELLY: Brendon, did you say that works best in centralized markets?

MR. KIRBY: I don't know if I want to make that generalization. In the particular cases that we've been able to see through the audits, that has turned out -- let me phrase that right -- the instances where the operators must strongly expressed that they had the confidence the units would respond, was because they knew the units would respond, because they were moving them. In those cases, they all happened to be market environments.

COMMISSIONER KELLY: Thank you.

MR. KIRBY: Backup control center is another area with tremendous variability in the capabilities that different control areas and RCs have. For functionality in the very best, all of the functions are duplicated in the backup facility -- the reliability functions, computing facilities, all the tools are available and full market operations are supported.

In the worst cases there is no backup facility; there is simply a plan of what to do.
In the worst cases, there is no backup facility, and/or the facility requires the continued existence of the main facility's computers to continue operating. A very good question to ask is about the smoking hole scenario. What happens if your main control center is a smoking hole? Can you continue to function?

That tends to draw out the responses you're looking for, and you can identify the places that have got the full redundancy.

MR. McCLELLAND: Brendon, let me ask a quick question there. You've been on several audits, eight or nine audits. I've lost track.

You've also seen the results, I think, from all the others. Without naming names, can we get kind of a best scenario that you've seen, as far as backups, and a worst scenario?

The followup question, I guess, to that, actually would be a precursor, would be, is there a specific NERC requirement for a certain type of backup facility? Does certain equipment need to be included? Certain types of buildings? Certain types of security? A certain amount of staff?

I think I know the answer, but can you give just kind of a gross comparison where maybe both would have met
the standard?

MR. KIRBY: In the best case -- and I'm thinking of one very specific example -- they provided the full redundant computing capability, full communications, full redundant communications at both facilities. They have an ability. The operators are aware of multiple routes to get between the main control center and the backup.

It supports not only the basic reliability functions, but the market functions, because they believe that the market functions also contribute to reliability. The operate routine drills. They have also operated -- in this particular case, the main control room needed to have an extensive cleaning, so they just picked up and moved. There was no hesitancy whatsoever, and they moved to the backup to feel confident in running from it.

In the worst -- obviously, the worst is that regions don't have a backup facility. Often people say, well, we're planning on having one.

I should mention another one of the best has a full forward on the backup, but they felt that was too close, and I believe it was ten miles away, and they felt that there was a potential for some sort of an attack that could cover that kind of geography, and they were building a third backup center 100 or 120 miles away, to give them enough distance. That was certainly quite impressive.
MR. McCLELLAND: The worst example, I know you're coming to is like buy a double-wide trailer, a folding table, and a laptop. Would that satisfy whether I skate through the report or not?

MR. KIRBY: I think you would skate through the standards. I don't think there is any standard, except that you need to have a plan.

The reports, in general, would recognize that you need more than that in a backup. The reports, that is one place that there has been a lack of consistency.

Some of the reports are specific. They don't feel that relying on the main control center's computers is acceptable. Other reports have allowed that. They said, oh, that's fine; they do have the backup and that's not actually in violation of a standard, so the report doesn't highlight it.

In some ways, facilities that are inadequate are perhaps worse than no facility, because there's no facility you can recognize; they just don't have any.

Interesting that you mentioned the trailer. In one audit we were at recently, they don't have a backup yet, but the plan is to have a backup. The backup is going into a double-wide. It was going to be at the substation. And this is in tornado country.

MR. McCLELLAND: Was it accepted by the review
team in the absence of a more rigorous standard? I suppose it would have to be, with, perhaps a comment.

MR. KIRBY: Right. The comment was, since even that level of backup didn't exist yet, that the RC was encouraged to go ahead and complete those plans and actually have that in place. The report did not reflect on the quality of the backup that was coming.

MR. McCLELLAND: Thank you.

MR. KIRBY: A few of the control areas hand RCs operate with continuously-manned backups. That's obviously got some real benefits to it. Whether they have been tested and exercised, some, yes, some, no.

There are control areas that feel it would be far too dangerous to try and test and exercise their backup facility.

Communications: Full communications in the best, it's full and redundant. Furthermore, in the best cases, the operators are knowledgeable of the communication paths.

In some cases you can say that it's not real important. The communications people worry about that. It can affect reliability, though, if you're not aware of what it is you were going to lose when you lose a certain set of communications.

In the best cases, the operations were aware of
not only the types of communications, but also of the routes that the phone lines take, for instance, so that they know that they are physically separated.

Proximity: Obviously, you'd like to have the facility far enough away to avoid a common disaster, but close enough to get to promptly. There is a lot of difference there.

Some facilities are extremely close, and you wonder how you would expect one facility to survive, if the building adjacent was lost.

(Slide.)

MR. KIRBY: The next slide is about training in simulators. There is a tremendous difference here.

The training requirements, the actual training requirements, tend to be fairly minimal. The actual hours that are required, quite often you find, first, that the controlling RC will state, here's how many days of training we provide in the schedule. As you probe more deeply, you find, well, yes, but vacations, sick leave, and coverage for other shifts, all comes out -- frequently all comes out of that training schedule, so, the amount of hours that are actually available for training, are greatly reduced.

You find a significant difference in staffing levels, where either five, six or seven shift rotations are supported. I only recall one case where there were seven.
That was certainly exemplary.

The training is often unstructured. In the best cases, it is quite structured and there's a program established for what training an operator is expected to go through. In other cases, it's very unstructured, and the operator is simply given time to keep up with the industry during that time.

CHAIRMAN WOOD: And that training is done by whom and for whom?

MR. KIRBY: There's a good range of difference there. In the best cases, there will be a training staff and the training staff would --

CHAIRMAN WOOD: At the RC?

MR. KIRBY: The RC or the control area. The organization itself will have a training staff. It will outline a program. In the best case, there will even be some sort of testing and feedback, so the operator knows how well he's doing, so that the management knows how well he's doing.

It's reasonably common, though, that there is not a structured program, especially in the smaller organizations. There won't be the ability to have extra staff, and so it's left very unstructured.

On simulators, there is quite a range there.

There is, of course, no requirement for simulators. The
control areas and the RCs that have simulators, tend to think extremely highly of them.

They provide a very variable, high-stress environment to train in. The operators get to experience things that you hope they don't get to experience in real life.

On the other hand, the simulators are expensive. They are expensive in dollars and they are expensive in manpower to keep them running, so it's only a pretty good sized organization that's able to expend that effort.

We had an interesting experience in one of the audits where a combined control area RC was installing a simulator. The team felt that they hadn't added enough staff in to support that. I'll talk about it a little later. The team was reluctant to discuss manpower issues, so they only gingerly brought up the question, you don't really have enough people, and the RC just jumped on it and went around the room quizzing the team as to, do you have a simulator and how many people do you have to support it?

And, of course, they thought this was kind of intimidating. It turned out, no, they were very interested in the feedback, and they concluded from that, that they had not had enough staff built in, and they promptly added more staff to that function, they thought so highly of the simulator that they wanted to make sure they supported it.
MR. KIRBY: Wide area visualization: It's a problem that's been recognized, especially highlighted by last August's blackout. We have seen improvement in the data that's available.

Control areas and RCs are seeing data coming from a larger area, which is good. There are data quality problems.

In the best cases, you see data coming in from a very broad geographic area; in the worst cases, it's just confined only to the single control area.

One real difficulty is, how do you visualize? What do you do with this data? How do you present it to an operator so that it's meaningful?

As an industry, we're very good at having ways of presenting problems with a single generator. You can see the problem, you can dive into it, you can identify what it is. There are very good tools for that.

Tools haven't been developed yet in the industry, saying this is how you should present a very large deal with this type of information.

In the best cases, both control areas and RCs are trying various approaches. They're trying out new ideas, they're fielding them in the control rooms, they're seeing how the operators like them, how well they work.
That is probably the best that can be expected right now. It's a good way for the industry to identify what is best.

In the worst case, of course, the information simply isn't presented.

(Slide.)

MR. KIRBY: The next slide is on security. The teams that look at security, try and say very little about it, partly because you don't want to be highlighting vulnerabilities. That makes perfect sense.

The differences in security vary tremendously. In the best case, you had armed federal officers, so you've got basically an army at your disposal for security.

In other cases, there is no specific security, other than locking the door and that kind of thing.

There is quite a diversity in how well identification is checked. In some places, ID is asked for of some kind; in other cases, no ID is asked for. In some cases -- in one specific case, whenever the team or team members were in the control room, there was a security person in the control area.

I know I went up and asked if he was there just for us, and I was told, yes, he was. That was kind of reassuring.

In another case, a team member was left alone in
the control room and no operator was present. That's a pretty big difference.

(Slide.)

MR. KIRBY: Conclusions: This is the last slide.

There's a lot of diversity, both on tools, procedures, backup centers, the training, wide area view, and security. There also seems to have been a lot of improvement, but there's also a tremendous need for more improvement.

Perhaps the biggest thing is that there has to be some sort of minimal standards. The minimal standards now are extremely low-bar.

CHAIRMAN WOOD: Are those standards the ones that are being codified in Version 0 right now, or does Version 0 not even speak to these types of issues? Do you know, Richard?

MR. SCHNEIDER: Version 0 is an interpretation for clarity of the existing standards. Version 1 bumps it up.

CHAIRMAN WOOD: It will push that up? What do we, kind of collectively, on the public interest side of the fence, need to do to get that standard up to, I think, some of the things that Brendon pointed out here?

MR. SCHNEIDER: I think, again, the mandatory
aspect, for Congress to make NERC standards.

CHAIRMAN WOOD: In the meantime, our job is to get the crisp enforcement standards ready, so that on day one, when they push that button, it's ready to go.

MR. SCHNEIDER: I'm going to have to ask somebody else to address that, but I believe that's being worked on right now.

CHAIRMAN WOOD: Is this the stuff, Mike, that's going to be in Version 1?

MR. GENT: And beyond. My name is Michael Gent. I'm the President of the North American Electric Reliability Council.

A lot of these issues will continue to come up in terms of security, through the standards process. For instance, the cyber security standard, which now is an urgent action temporary standard, which will be a permanent standard later on, will be much tougher than the existing cyber security standards, that will, of its own, require security to the point where, for instance, you can be left alone in the control room, and stuff like that will be fixed.

We also have physical security guidelines that we are intending to put much more emphasis on in the coming year, so that physical security will be improved in all facilities, not just control rooms, but in the switching
stations, the transmission stations, and so on.

As far as improving the level of system analyzers or state estimators, contingency analysis in the control rooms, we need some advancements in technology to be able to lower the price of these facilities. I think that's on the way.

This is where the public interest side -- and I like to think of myself as also being public interest -- I think we need to keep pushing our research organizations like EPRI and others, to develop lower-cost simulators that can be specifically applied to the facility.

EPRI has a pocket simulator. It's a great device. We need to come up with ways of tailoring that for each specific control center, so the people in the control center can train on their own systems.
Whether this is done through standards or not is something that's going to have to come up through the industry. I think it will happen.

While I have the floor here, if I could say a little bit more about the training. I've talked to many of you personally. I think this is our next great effort. We'll focus as much effort on that as you've seen put into these readiness audits.

I think a lot of the issues on training are going to be improved. How we're able to enforce compliance to training standards, to training curriculums, to certification has yet to be defined. But that program is well is under way.

MR. MCCLELLAND: I appreciate the answer. I guess the converse to that would be are there gaps? Are there vulnerabilities while we wait for the technologies? Do we have these vulnerabilities? Are they in place? Are they being recognized and addressed in some fashion?

MR. GENT: We're always going to have vulnerabilities. We're just raising it to the level of difficulty to get to the vulnerabilities. Yes, they're going to be there. I don't know how we do away with it short of mandating that everybody has to operate a control center in a certain way.

Once you lose the diversity, you also lose
innovation. So you have to make a case of putting some standards out there that people can reach without specifying how you do it.

For instance, just one you may want to think about. The standard is very lose for backup control centers. And I personally abhor that. But I can't personally change it either.

However, I was told by a smaller system we have a plan but we don't have a backup system. Our plan is to turn it over to A over here. If A can't take it, we turn it over to B. This is a perfectly viable solution, not having a backup control center.

They've got a plan that achieves what a backup control center is supposed to do. Such is the nature of our standards. We're trying to get performance rather than specify equipment and facilities.

MR. MEYER: Mike, could you review for us the linkage between the version one standards and the functional model? I'm thinking of a minimum functional requirement that the model would set for different categories and players.

Does the functional model just sort of pick up the version I standards as they emerge and then plug them in and go further from there? How does that work?

MR. GENT: I think I'd turn that upside down.
When we get version zero and the board approves version zero in February and we set the implementation plan, we will have moved the existing standards into the format of a functional model where possible and be doing the same thing. But version one, the standards from then on will be raising the bar. They may be alternating the existing, which at that time will be from version zero or they may be adding to it.

All the standards at that point will be referring to the functional model entities and the functions they perform.

Did I answer that?

MR. MEYER: Okay.

MR. MCCLELLAND: Let's move on.

Lastly, in this panel is a presentation of the responsibility matrix as has been assembled and populated by John Kueck. This item is also a critical for us, as responsibilities at present vary between the bulk power supply entities.

This does create the potentiality of having overlap or worse gaps in the execution of duties necessary to maintain the security and reliability for bulk power supply.

With that I'll turn it over to John.

MR. KUECK: Thank you.
MR. KUECK: The matrix of reliability responsibilities is something that we have put together as an effort as we go through the readiness reviews to try to keep track of which entity performs which specific responsibilities. There are many, many tasks and functions being performed now.

And as we've discussed this morning, the whole situation in many areas is in a state of flux.

As we go from control areas to transmission operators and as we move into the functional models, the team felt that we needed a way to try to keep track of a set of critical responsibilities and to have a chart of ownership for critical responsibilities among the various entities.

MR. KUECK: So we chose to identify a set of 21 critical responsibilities for each part of the entity. We couldn't do all the various tasks or functions, but we chose 21 that we thought were key and critical.

Then, based on each audit, we made judgments as to whether the responsibilities were covered or not covered. Or where we had kind of a grey area, perhaps they were covered with some sort of clarification.
MR. KUECK: The first five responsibilities are from the functional model. And they are for entities such as the reliability authority, the balancing authority, the transmission operator. So we know what type of entity we're looking at.

For example, a security coordinator might be audited with the reliability coordinator template. But we may expect him to have responsibilities in common with reliability authorities.

So the idea is with the first five rows to see who we're dealing with. Then the next 16 rows on the chart are specific responsibilities that we selected as examples of things we'd really like to know about -- things like who monitors and controls voltage and the responsibilities that, as you said, might possibly have fallen through the cracks or whose ownership is not clear.

And ultimately, NERC has a mapping effort. And we thought this could lead into the mapping effort.

In brief, there are vast differences between the various entities, even entities that have the same function as to how they deal with the set of responsibilities. And we'll get into that.

(Next slide.)

MR. KUECK: First what I'd like to do here is to go through the responsibilities that we selected so you have
a little background before we get into the chart.

The first five, as I said, are not all the responsible entities, but five that we chose as significant:

the reliability authority, who enforces requirements, monitors parameters, performs analysis, among other functions;

the balancing authority, who calculates ACE reviews, generating commitments, and formulates an operational plan;

the transmission operator, who maintains voltage, monitors operations, and provides maintenance schedules;

the interchange authority, who determines interchange schedules and maintains a record of transactions;

and the transmission service provider approves or denies transmission service requests and coordinates at ATC.

Then the selected responsibilities.

(Slide.)

MR. KUECK: The next 16 that we selected.

Someone could be a market operator.

Seven is to set pre-contingency voltage limits and determine set operating voltage limits which will assure adequate post-contingency voltage. We heard a comment this
morning about reactor reserves. This is a way of insuring that you have adequate reactor reserves by doing a study to determine post-contingency voltage and set pre-contingency voltage limits that will assure that your post-contingency voltages are adequate based on the reactive reserve that you have.

But then for people who don't do it that way, perhaps they determine reactive requirements, which is number eight -- determine a set reactive reserve such that post-contingency voltage is adequate. The reactive reserve requirement may be expressed by pre-contingency voltage limits, as we said, in number seven.

Number nine -- determines amount and location of operating reserves.

Ten -- monitors and takes action on real and reactive reserves.

Eleven is monitors flow gate congestion.

Twelve is monitors and declares an emergency. It has clearly defined entry criteria for the emergency condition, and has the authority to declare the emergency when these conditions are met and has the authority to set aside normal operating procedures and transfer to emergency procedures.

The key thing we were looking for here was a very simple procedure that states in simple terms with defined
entry criteria when you have an emergency so that the
operators know I'm in my emergency condition. I set my
normal procedures. I go to my emergency procedures.

We're looking for something that's simple, a
procedure that's simple, that the operators can have and
feel comfortable using.

(Slide.)

MR. KUECK: Item thirteen is something we've
already talked about a little bit in this panel -- shedding
load in event of emergency is their procedure and do
operators have the authority to shed load when an emergency
is declared without gaining any management approval.

Fourteen -- performing voltage monitoring and
control. You can see we hit on voltage quite a bit. That's
because of concerns with adequate reactive reserves. How we
determine adequate reserves, how we deal with possible of
voltage collapse, areas that are susceptible to collapse.
Who is responsible for maintaining voltage within set
limits? Who monitors and maintains voltage within these
limits?

Item fifteen -- insuring generational and load
balance.

Sixteen -- performing contingency studies.
Seventeen -- real time state estimation.
Eighteen is the key one providing neighbor system
awareness monitoring conditions in real time beyond the area footprint into the neighboring systems.

Nineteen is an especially interesting one -- determine nuclear plant voltage adequacy. We wanted to know if the entity had established agreements with nuclear power plants in the area to insure that the system is operated in the manner such that the nuclear power plant voltage will be maintained with the needed limits.

Looking ahead a little bit, this was an area where we saw a lot of grey area, a lot of clarification that was needed during the audit, a lot of misunderstanding on the part of the operational staff.

In some areas we saw just a tremendous response, top to bottom, from the operators up to management. They knew what their procedures were and their procedures looked great, but it was a very checkered type of response that shall be seen.

Item 20 -- approve generation outages.
And 21 -- approve transmission outages.

Before we get into the actual chart -- next slide -- some preliminary general findings. One very interesting thing is that some entities are keeping their historical responsibilities even though other new entities are now responsible and have the needed data.

For example, EMS and contingency evaluations.
Some entities wish to continue to maintain EMS and to do their own contingency evaluation even though they're not really responsible for that now in their new role in the functional model.

Unfortunately they don't have the data to do it because they can't get the data because somebody else now owns it and isn't giving it to them.

I have to say that in a lot of these situations these almost amusing situations come up during the audit. We say during the audit this doesn't look satisfactory. We need to deal with this. Everyone agrees it's not satisfactory. We need to deal with it.

And as part of the audit team approach we come up with a plan of action for the reviewed entity to go ahead and deal with the situation. The concern that I have is what about all the places where we haven't been, where these things might be existing and no one's come along and asked the questions.

CHAIRMAN WOOD: It is duplication. That's a whole lot less worrisome than that gap.

MR. KUECK: That's true, but one of the problems with the duplication is -- and this was a problem that they raised to us -- is what happens if they come up with different numbers and they get in a debate as to who's in charge.
We have different numbers than you do. We think we have a problem and you don't. And they're going to have different numbers because they're not working with the same data.

CHAIRMAN WOOD: Is that what happened last summer? Or was it really that we didn't have the right data?

(Slide.)

MR. KUECK: I think it was more of a really basic problem of data and personnel, operational procedure problems during the blackout.

But it was my personal opinion that whenever you have situations where responsibilities aren't clearly understood, especially responsibilities this detailed and this important, then you're looking for major problems to develop because people think, oh, that's not really my job or this isn't the neighboring area. We see something brewing next door. What should we do?

In my opinion responsibilities need to be very clearly identified and understood. That was one of the reasons we put this matrix together -- was to see if we could try to bring some light to the whole thing.

Another alternate position was some control areas believe that many of their responsibilities have been delegated and no longer perform them. We were at one
control area where we were told we still have our
transmission system, but we are no longer responsible for
functional control of our transmission system. It's not our
job. It's the ISO's, so that's the ISO's job.

Interestingly, that was the same control area,
one of the control areas, that also said, by the way, if the
ISO told us to shed load and we thought it was a bad idea,
we wouldn't do it.

That was another issue worked out during the
audit so that in the audit report we can say we came across
this issue. It was worked out during the audit and the
operators are being retrained. And procedures are going to
be realigned.

That was my next bullet. Some entities do not
recognize the authority of the RA to command the load shed.
And we saw many controlled areas that do not have written
agreements with their reliability coordinator, or else the
written agreement that they had was so vague that it was
really meaningless.

Some of our preliminary general findings are on
the next slide. Some control areas presently do not
establish reactive reserve margins. In some cases
reliability coordinators do not directly monitor voltage.
They might monitor but a few points, but they don't monitor
across the whole footprint.
Some ISO's have delegated the voltage responsibility for nuclear power plants to the transmission service provider. But the transmission service provider can't do that job alone. He has to have the ISO working with him, knowing what the needs are. He can't maintain those voltages alone.

Some control areas have no entry criteria for emergencies, which is what I was saying earlier. You need to have clear, well understood entry criteria for emergencies so you can say, oh, I'm in an emergency; I set aside my normal procedures and go to my emergency procedures. And it's well understood it can be a simple decision.

(Slide.)

MR. KUECK: Let's go into the matrix. If you see across the top A, B, C, D, E, F, G, and so forth, those are the various audited entities. If it is a kind of green color -- it looks almost blue here today -- that's a yes. That means the responsibility is taken care of.

If it's red, it's no.

If it's white with a question mark, that means we weren't really able to figure it out. It might be then at the bottom, where it's tan. That means the responsibility is taken care of, but with some sort of a comment or clarification.
What we'll do is just go through these. You can see that there are a number of tan areas and a number of question marks even after the audits.

In the first column there you can see that some of the control areas are very limited in what they do now and the functions they perform because of the new functional model.

That's not necessarily bad. And the concern is that because this is a situation of flux, we just need to know who does what.

If we look under column B on this first slide, you can see that some control areas don't do some of the things or were unclear that some of these things would be kind of good to see them doing like pre-contingency voltage limits determining reactive requirements. Question marks determining location of operating reserves was a yes with a clarification.

(Slide.)

MR. KUECK: Let's go to page 2. We go out through several more audited entities, again with the same first set of responsibilities.

In column L there you'll see it's amazing how limited these responsibilities can be.

If you look at that first column, we've got greens there at the top and bottom, but all the rest is red.
In column T you can see there's a great deal of red. That's because the entity has delegated almost everything. There's nothing wrong with delegation. But when it's delegated, that delegation has to be extremely well defined, understood, and agreed upon. That's the point that we need to make.

Let's move ahead to the next slide.

CHAIRMAN WOOD: Is that then what you're looking for as far as the documentation?

MR. KUECK: That's correct. We go ahead and look for documentation. And we have left off the names, okay, across the top. We just have letters across the top, but we were greatly disappointed in some of these some areas where there was a great deal of delegation in the documentation that showed the responsibilities had been delegated.

(Slide.)

MR. KUECK: The next one is responsibility, the 12 through 21 group. So now we go back to the second set, the 12 through 21 list of responsibilities in the first group of areas.

Unfortunately you can see there in row 19, which is determine nuclear plant holdage adequacy. There are a few question marks in there. And there are a few areas. The red areas don't concern me too much. That means simply it's not my job; I don't do it. It's somebody else's job.
But the question marks came up sometimes. When we got there and we asked the question, they said, "Well, we sort of have a rule on that but not really." That's the transmission service provider, for example, okay?

You need to go talk to the transmission service provider or you need to go talk to the transmission operator. And then in some cases we haven't done that yet. In some cases we've been in the transmission operator after doing a lot of digging.

We've found some good procedures, but the operators didn't know about them. The operators hadn't heard about them. Those are very good things that the audits are doing for us. They are flushing all this out.

CHAIRMAN WOOD: If I may ask the question why wouldn't the operators know about the procedures for the nuclear power plants? Is it something that is just considered such a rare contingency that it may not be on the front burner? Or why would there not be an emphasis there?

MR. KUECK: In this particular case it was because they had made changes to their transmission system this year. They hadn't retrained the operators. On specific voltage limits the operators weren't aware of the voltage limits that nuclear power had.

We were able to find the analyses. We were able to find the documentation that showed that they had done
studies when they made the changes, but they just hadn't followed through and given the operators the same understanding that the operators needed to have.

CHAIRMAN WOOD: Some of the problem, is it caused -- or maybe most of the problem -- caused from the regulatory standpoint because NRC has a certain compartmentalized area versus FERC, which has another limited area and the two really haven't engaged?

MR. KUECK: The NRC's jurisdiction stops at the isolated phase bus duct. They will not absolutely positively go beyond that. It would be inappropriate to go beyond that. They do not look beyond that. And they are very, very firm on that point. That's not their jurisdiction.

The NRC requires the nuclear power plant to determine the accessible voltage. They can require them to do that, but that is as far they can go.

CHAIRMAN WOOD: How does that relate back then to the industry? The industry deals with the NRC to that point, FERC to the next point or NERC to the next point.

It seems as if for that particular column, John, you have several question marks, as many as anywhere else if not more. Is that separation or is that disconnect do you think? What do you think is the reason?

MR. KUECK: What is the reason for the
disconnect? I think the reason for the disconnect frankly is that the need the nuclear power plants have for this voltage, which is in my opinion a highly critical need, has not been communicated adequately to these entities, to the control areas, and to the transmission operators and to the transmission service providers.

I think if that need had been communicated adequately to them, they would have done the training on it. They would have had the procedures in place to handle it.

MR. KUECK: And the other reason why we spent the time on it is because of the amount of generation represented by the nuclear power plants and also, I guess, with my own limited information about the circumstances my assumption would be that the backup generation on site of the nuclear facility would be adequate to stabilize the facility itself.

I see a smile. That's something that we hear a lot. Oh, the nuclear power plants have diesel generators. We absolutely positively do not want to use those diesel generators. This is so key when we do use them in a blackout, all right, fine, we use them.

But we don't want to be in a situation where we think we have adequate off-site voltage and we start up all our safety loads that we're going to shut down the nuclear reactor with with the off-site voltage, thinking it's
adequate.

And it turns out to be inadequate in midstream. We're out there in midstream trying to shut down a plant, turning all these pumps with its voltage, and the voltage goes down.

And it damages the pumps and possibly causes thermal overloads to trip, possibly causes fuses to blow. Then we have to restart with diesel generators. We do not want to be in that position.

MR. MCCLELLAND: If the group was to a point where it was determined that it was stable as far as the plant operation, then it would initiate shut down from the backup generation.

MR. KUECK: It depends on the specific nuclear power plant. But the control areas do it right, issue a communication on alarm to the nuclear power plant saying we can no longer provide adequate voltage. That's the key thing.

Then the nuclear power plant goes into a specific action statement, knowing that adequate voltage can't be provided anymore. Okay, it's the knowledge. There are many that do it extremely well and provide a special alarm, the highest alarm in the nuclear plant control room and the same alarm in the control area and control room saying the voltage at this point -- we can't guarantee you adequate
post-contingency voltage anymore. We're having stress on
the grid. We've had contingencies. We can't guarantee you
adequate post-contingency voltage anymore and now you know
it.

And the nuclear power plant at that point in time
knows it. And they can take action to make sure that
they're safe in spite of that situation. It's when they
don't it and a contingency occurs -- that's the risk.

MR. MCCLELLAND: Which is back to your point in
the matrix that the operators need to be trained and have a
situational awareness of the nuclear power plant's need or
you may inadvertently trigger an event.

MR. KUECK: Right.

MR. MCCLELLAND: Thank you.

(Slide.)

MR. KUECK: Just one more thing I wanted to point
out. In column N it's just surprising how many noes we
found. In some cases you see all the red, all the
responsibilities that this particular entity does not have.

Next slide.

(Slide.)

Some interesting notes. Actually I've mentioned
some of these, an entity which stated that they had the TO
responsibility also stated that they do not have functional
control of the transmission system and that the ISO was
responsible for monitoring flows.

A TO did not have a procedure for monitoring conditions and declaring an emergency. A CA would shed load when directed by the RC if the CA felt it was the wrong step to take. The responsibility for contingency studies taken by both the CA and TO but not cooperatively. And a CA was unclear on the ownership of many significant responsibilities.

Go on to the next one.

(Slide.)

MR. KUECK: An RA exists who is not the interchange authority, who does not determine the amount and location of reserves, does not monitor voltage or nuclear power plant voltage and does not approve outages.

One audited entity was not an RABATORIA and essentially all responsibilities were delegated. In addition, there were no agreements for delegation.

One reliability coordinator did not include all his control areas in emergency planning because not all of them would come and participate.

Let's go ahead to conclusions.

(Slide.)

MR. KUECK: My conclusion, then, is that the ISO must be capable of monitoring system conditions, declaring an emergency when established criteria are met, then
responding with emergency procedures because sometimes there is no clear emergency responsibility below them.

We were talking earlier about defense in depth. I think defense in depth in some cases is really being eroded because people are saying it's not my job anymore. I don't have functional control of the transmission system. I know the ISO's watching over me and so the ISO had better be capable of doing these things.

Another conclusion I think we can make is the actual ownership of the responsibilities is presently disorganized. It's in a state of flux. We heard again this morning how responsibilities is changing. Mapping of the responsibilities, which is something NERC is undertaking now, is really going to be a challenge.

It's going to be a difficult thing to do. And I don't think a good understanding of responsibility ownership across the nation is presently available today.

(Slide.)

MR. KUECK: There's been a recurring theme that key responsibilities have been delegated, but with differing institutional frameworks and imprecise splits and functions. It's sometimes difficult to determine if a responsibility is being adequately addressed.

And perhaps it would be better to do -- and this is just a thought -- combined control RC or combined RABATO
reviews of some entities to handle the delegation. I don't know. In one case we were at a balancing authority. They said we can't answer question after question. The TO is only a mile away. Go talk to the TO.

We went over and talked to the TO. And that helped a whole lot. It really did. Actually we had to make an appointment and come back later with the same review team. But we were able to iron out a lot of these things when we could talk to the two together.

Also as a suggestion, when the functional registration is done, I really recommend that the functional registration include not only the function, but also the tasks and relationships that are performed for each function per the reliability functional model so that all this data is acquired at the same time when the registration is done.

That's all I have.

CHAIRMAN WOOD: What is being required presently?

MR. KUECK: As I understand it, it's just the registration of what sort of entity they are.

MR. SCHNEIDER: I believe they are defining the tasks as well that go along with the responsibilities.

MR. KUECK: I didn't see that in the letter, but I'm glad to hear that.

MR. MCCLELLAND: As I look across the panel and the audience, it looks as if there's some hungry and tired
expressions, so let's skip questions for now. We can come back and revisit that in the last half hour. Let's move to the third panel.

The third panel will be Brendon Kirby and Dave Hilt. I think you've got this one, don't you, Dave?

The third panel will discuss the issues specific to the audits and how they affect the outcome either good or bad. We'll close the session with planned changes to the audit.

So let's begin with Brendon. Brendon's going to talk about what worked, what didn't, and what were the surprises. Following his presentation let's hold off on questions. Let's move directly into Dave's presentation after Brendon's. We'll go ahead and discuss what's changing to address the issues that we've seen.

As far as the audit structure in process, I'd also ask the speakers -- let's try to keep to around a 15-minute timeframe if you can to leave some questions.

Brendon, thank you.

MR. KIRBY: I'll be discussing observations on the audit process.

Go to the next slide.

The process observations looking at FERC's role, the subjective nature of the reviews, the success of the published reports in showing the differences between the
entities, talk a little bit about difficult subjects, the voluntary nature of the process, the role of the facilitator, and the process efficiency.

(Slide.)

MR. KIRBY: There's a great deal that's very good in the process, especially given the structure it's operating under. And the primary feature of that structure is that there are no rigorous reliability standards.

Given that you're having to operate without those standards, there is a lot that's good. I think it's the general consensus of the teams that have been doing these audits that these are necessary and they are increasing reliability. They do identify vulnerabilities. They certainly recognize excellence and best practice. Hopefully they encourage improvement.

The teams have had to be multiple disciplined and quite experienced. The fact that the reports are published is very good. Many, perhaps most -- almost all of the control areas and RC's are genuinely interested in improvement.

We've want international cooperation. Many thanks. The Canadians have been wonderful. Obviously there is no FERC jurisdiction. The hospitality has been very appreciated. This is an evolving process.

(Slide.)
MR. KIRBY: Looking at FERC's role, FERC does provide the continuity and consistency. And a fairly limited FERC staff has participated in all of their reviews. Several of the staff have participated in 8 or more. I think the top may either be 10 or 12 reviews.

It does provide an overall perspective and obviously there's independence. FERC clearly has no operational or market involvement.

(Slide.)

MR. KIRBY: Without clear standards the reviews are necessarily subjectives so they're not really audits. These are voluntary. They are voluntary on the part of the entity that's being investigated. And they're not based on enforceable standards.

So you can have ambiguity. NERC is definitely working on enforcement of standards. But it's obviously going to take some time. You end up with no specific follow-up or consequences or penalties in the event that there are negative findings.

With the ambiguous standard and no enforceable consistency -- and you do have examples. The backup centers -- the way they get reported out in the reports or the security is not necessarily consistent from report to report.

This does tend to lead toward -- the reports tend
not to fully emphasize the worst or the best. The worst you can always find good things to say. The reports deliberately do find good things to compliment even the worst on. Similarly, with the best there's always room for improvement.

Consequently, there's a tendency to drive towards the center in how the reports were written.

Last on this slide, it certainly is easier to emphasize the quantifiable things even if the subjective are more important, specifically the operator's willingness and ability to shed load.

Clearly the most important: Is the operator willing to take the action? Have they taken action in the past? But that's subjective. It's a judgment by the folks who are there.

You do have the quantifiable. Is there documented authority? It is very important -- is there the proper plaque on the wall and so forth. But it's very important to have the documented authority. But it's very easy going through the process to lose focus.

The most important thing is are they going to shed load when they need to.

(Slide.)

MR. KIRBY: Do we fully get the differences reflected in the report? There is a tremendous difference
in the entities being looked at. I think you can find clear
consensus coming out with the teams, as has been said by a
number of people.

In a sense it's like pornography. There is no
problem identifying the best and the worst. It's a lot
tougher to put that into the report. The lack of specific
requirements make it very difficult.

MR. MCCLELLAND: Well, if I can interrupt just
for one second, but the pornography statement -- it's not
identifying the best and the worst. I think your point was,
I know it when I see it.

(Laughter.)

MR. MCCLELLAND: Let's move on from there. Thank
you.

MR. KIRBY: Again, the full magnitude of the
difference isn't apparent in these written reports.

(Slide.)

MR. KIRBY: No one's perfect, so you're always
finding things to suggest even the best can improve on and
no one's truly worthless. Even the worst.

There are examples of things they're doing fairly
well. It may be difficult for somebody who's been on these
audits to judge. It doesn't seem to me when you read the
reports that they're reflected. We've had some independent
corroboration in getting other people to review them that
haven't been on the audit and saying they don't particularly see the difference.

(Slide.)

MR. KIRBY: With comparison reporting, one suggestion would be it might be good to develop some kind of a tabular -- put out a table really simple and straightforward -- that compares the results. You can arrange them so that a nonexpert could look at the overall results and see which entities are doing the best and which are not, which need improvement.

MR. MCCLELLAND: Along that same point would it be something that would be, say, a report card? It would come with a grade, so hey, my theory flunked. I guess I need to be active about this.

MR. KIRBY: A report card would be even better -- where you say here's the grade that's given. The table would kind give a backup of why, if they got a C- or got a D, why did they get that.

It would be interesting, too, to see if the teams could be willing to provide low grades. It's very difficult to go through it because these are subjective things. You don't have very specific things -- that absolutely you've missed 7 of 10 questions, so you get an F.

It is a subjective process, so it's tough to come out with a grade that's low. It needs to be done. And, of
course, it should cover the full range, all of the areas we
look at -- tools, training, shift coverage, operational
practices, the backup facilities.

The next slide.

There are difficult areas to address. It's very
tough for the teams to address things like staffing level.
It's been consistent throughout. Teams are extremely
reluctant to go out and say, gee, you don't have enough
staff.

The feeling is that's the prerogative of that
area and it's management. If they can do a job with minimal
staff, that's their prerogative. I haven't seen the team
yet that will address the staffing issue.

Tools requirements -- similarly. Easy to
compliment somebody for having excellent tools. Difficult
to say you must add this tool.

Costly, time-consuming actions. This is
frustrating. The team will deliberately go through and say,
well, there is no point in a recommendation that says in
March you must add X, Y, and Z tool by the summer because
you physically cannot.

It's not possible to do it unfortunately. That
can then get turned around where the entity can come back
out and say, "I've done everything that was required.
Therefore I must be in excellent shape."
No, you may have had things that the team just looked at and said it wasn't physically possible. So you kind of get a pass on it. There is a reluctance to include subjective judgments.

In one specific case the team felt the operators were complacent and inattentive, but the group decided they could not put that in a report.

Reluctance to name specific products. In this particular case we're looking at a wide area view, which is an area that has not been fully addressed. We're casting around for good solutions in wide area view.

One of the team areas wanted to place the name of the products, not as an endorsement but just so it would tell the industry, okay, this is what they're looking at. The feeling is no, that would be seen as endorsement, so we couldn't put it in the report.

And there can be a reluctance to pursue topics that aren't specific NERC requirements. You can't go after somebody for not doing something that's not actually required.

(Slide.)

MR. KIRBY: Controlled areas versus the RC's. In different frameworks you've got splits between the functions. As John was talking about, in the functional matrix this is kind of an even more primitive version. You
don't necessarily know what the split will be between the control area functions and the RC functions. It makes it tough to go in and decide is that really being done?

In many of the cases there's a combined control area RC function. Those are a whole lot easier to review. You can simply find out is the function being performed and you're not really worried about who's doing it.

It doesn't matter if it's being covered in the splits, where the control area and the RC are two separate entities. It's tougher because if you're only looking at one and that entity, the control area says it's being covered by the RC -- no ability to particularly go and find out if that is being covered.

And it won't be the same team typically that goes and sees the RC, so there's not necessarily the continuity. There's no list handed off that says make sure that function X is being performed.

CHAIRMAN WOOD: Who are the combined CARC's?

MR. KIRBY: There's a great number of them. PJM is one. ISO New England, IMO, Southern. New York certainly. There's a bunch of them that do that.

An interesting observation. In many of these -- where they do the RC function, there will be more than one control area they are looking at. You can find the distinction there.
The RC function may be being performed very aggressively for their own control area and in my opinion doing a very good job of being very much in the control area's business. You can see a reluctance that says that's another entity. That's a control area. As an RC I will perform the RC functions when they ask me for something, but I'm reluctant to get as deeply into their business. Things are just moving a little bit in my own control area. I'll just jump on them and get them to move.

You can see those distinctions. The responsibility matrix should be a tremendous help in identifying which functions and, very specifically, not only the functions but the individual aspects of those functions to make sure they're really being performed or who's doing it.

(Slide.)

MR. KIRBY: Looking at the facilitator's role, the NERC lead, as you expect, has the most experience with the audits, which is excellent. It's very important for the lead to be prepared.

There have been times where, due to the heavy workload for the leads, you're going right from audit to another. It's tough. That really should be work done to make sure they're prepared. When the lead is not prepared, it has a tremendous impact. It wastes a lot of time for the
rest of the team.

Remembering that the team is typically volunteers, it has an impact on the team and the entity being looked at. So you want that lead to have the time and ability to run a very effective process or very efficient process.

It's very good to have the control room walk through the day before. It gives you a sense for what the entity is you're looking at. There's a real danger of the lead dominating the process.

The lead ought to facilitate rather than lead -- draw out the participants. The participants have tremendous technical expertise. Draw out that expertise and make sure that they all -- if they're not giving an opinion, beat it out of them, provide pre- and post-support effort.

You've got to remember these team members are all volunteers. You want to capture their expertise, but not burden them with work. That forces the workload back on the facilitator. You certainly avoid the known process errors and hear there are no errors. You're right at the beginning.

The lead will typically point out that you need to ask open-ended questions and listen more than you talk. Never answer -- one team member should never answer a question for another team member. Let the CA or the RC
answer it. There may be a reason the question is being asked even if it appears to be a dumb question.

Never state a conclusion to the CA or the RC until the team has had a chance to really review it. The abilities are known. They should be re-emphasized throughout the audit. Volunteers are volunteers. They're not fully experienced in all this. They hear it once. They can forget it in the first hour, so it needs to be brought back to their attention repeatedly.

Next.

The questionnaire's real benefit is that it should be jumpstarting the process. It should really move people along. The facilitator ought to pre-review these responses, send them back if they're not right, don't accept yes, no answers.

You should typically have three sentences at most. You don't want people spending time writing a book about each answer. But you do want to draw out their answer. A yes or no is not a whole lot of use.

Never accept information. Information will be provided during the audit. If it's okay for information to be provided during the audit, don't ask the question. The questions should be designed to be things that should be provided. And certainly distribute the answers and responses to the team early enough that they can do a lot
with them.

Questionnaires are being continuously refined. That really needs to be focused on. A lot of effort should be put into really getting a good set of questions. So much time is lost based on trying to understand the question. They should be organized around the process that the team is going to go through. During the audit it should be lined up around the tools, interview the training, the operators, the backup facility.

(MR. KIRBY:) Audit guide. Similar comments. It should be organized around the way the process is going to go to the extent that it can be done. Check-off lists are very useful. The new check-off list on tools -- one on responsibility delegation. The fact that you can check them off, you know it's covered. Then you can focus on the areas that are critical.

(MR. KIRBY:) The team's size and composition. You definitely want to have diversity to the extent possible. You certainly include members from at least one other interconnection. It's best if you can have members from both other interconnections. Ideally the auditors should be independent experts if that can be done. A diversity of expertise is
also desirable. Obviously you have operators, but you also need planners and you need tools, experts. Diversity is very useful.

CHAIRMAN WOOD: So what size of the team, then, would be ideal?

MR. KIRBY: That is a problem. In some cases team size becomes difficult. We'd like to slim the size down. Because the entity we're looking at is smaller, I think the nine size worked out fairly well where you had three groups of three.

We have seen the problem. I don't know if interest is falling off but, of course, people are very busy, so both NERC and FERC should encourage participation especially from the best entities. That way you bring in members, one, they're from a good entity so they're probably very good experts. You also will tend to lift the bar.

Next slide and a follow-up.

Immediate concerns should be addressed right away rather than waiting until the reports are finalized. Certainly establishing specific practices to correct deficiencies would be a big improvement. They should be differentiated by severity. Critical things ought to have a timeline that's very much compressed.

Also capturing the best practices, that processing. Perhaps even naming best practices isn't good.
Best practices may connote something that's great when somebody has enough time and money. But when I'm in the real world, I just want to be as I need to be. Well, these best practices are really kind of as good as you need to be.

(Slide.)

MR. KIRBY: Finally, in the next the conclusions. Lack of enforceable standards makes the process subjective by nature. And while until we have enforceable standards, we need to recognize it should be subjective and we should facilitate its subjective nature. That does give you mixed results.

Obviously enforceable standards is what we need to drive for. The process identifies reliability concerns as well as areas of excellence. And that's good. But the reports unfortunately don't really reflect that, so there is room for improvement.

Structured support, consistency, and objectivity are good areas to focus on for improvement.

CHAIRMAN WOOD: These are the kind of things that you all brought up when you met with the audit team at the end of June?

MR. KIRBY: To be completely frank, the meaning of the end of June, it didn't get into as much depth as it probably could have.
CHAIRMAN WOOD: This is a lot of good follow-up that was brought up with David and the others. They were kind of scoping these out for the rest of the year. I do worry about the falling off part.

I will certainly will do my part meeting with the EO's that frequently come to our office to make sure that we continue to get good volunteers to participate here. That's how it's set up for now. And I think we can move to a brand new world.

But it's going to take a few years to get there when you have a professional team. And that expertise resides within the industry. I know from my experience here. So we will do our part there. Good thoughts -- I hope they'll be taken to improve it for all of us. David.

MR. HILT: Thank you again, Chairman Wood and Commissioners, panelists.

We've seen a number of items to consider in furthering the audit process. As Brendon mentioned, a lot of these things. We had some of this material back in June and we will pushing pretty hard to get that and get the meeting scheduled so that we could move forward.

We've made a number of changes with the process. And I think some of them have already been addressed. And we may want to further refine the process.
Go ahead with the slides, please. And go ahead
to the next one.

MR. HILT: What have we learned in the process?
Well, just as some process issues, we've certainly learned
that everyone must follow the prescribed process. Once we
try to step outside of the process for whatever reason, we
usually run into some trouble.

That includes the team leaders, the legions, the
regional members, the volunteers, the auditors, the
observers, and even those being audited. If we try to
circumvent the process or shortcut the process or change the
steps in the process, we usually run into some issues.

Report development. We know we've extended the
time. Originally we had 30 business days to complete the
report reviewed by the audit teams. By the entity being
audited, there just wasn't enough time to provide adequate
comment. And we heard a lot about that, so we made a number
of changes to that.

As we know, the important development must allow
for some further comments from all the parties who have been
involved in the audit to get the comments in on the report.
If we rush to the report itself, we may have some errors in
it, which are just absolutely not acceptable, as we post
these things.

Certainly, as Brendon alluded to, we've had some
discussions about looking at small control areas versus large control areas. I think we've all looked at participating -- whether or not, for example, FERC needs to have two participants on each one of the small control areas.

How do we look at the teams so we don't walk in and overwhelm the guy? At the control center in a small 300-megawatt municipal we may have more people on site than they have on shift. That's one of the issues we just need to be cognizant about.

Partly, as Brendon mentioned, because particularly in the larger ones, where you're going with three teams, you can split up and go look at the control area. In some of the smaller entities you don't necessarily need to do that because you're going to be talking to the same people. You're going to have the three teams sitting simultaneously in the same room dealing with the same individuals just because of the operation.

Delegation of responsibilities. As John Kueck has pointed out, you know, the functional unbundling of the industry has made some significant changes in who has what responsibilities. Traditionally vertically integrated control areas, utilities had the full responsibility. That's been moved around -- the development of ISO's, RTO's, et cetera has moved that around.
And, of course, the functional model is looking to address that and map that. And I appreciate John in looking at some of the mapping. We're also looking at that, trying to determine exactly how to do that.

But the delegation of responsibilities has actually delayed us from getting some of the reports out simply because, as was noted earlier, we go to one site. We discover that they're not doing those responsibilities so now you're got to reschedule and go back out to another site -- a second, third, and fourth site in some cases to track the entire trail all the way down.

It's an issue that we hope we can bring some closure to as we get into the functional model.

Finally some things that we learned. We were trying to bring consistency to the reports. We've changed report formats several times. We provide the auditors, the team leads at least, some guidance on what we expect and how we want the report laid out.

And we're certainly interested in that and what needs to be in those reports to make them usable for everyone.

(Slide.)

MR. HILT: The process improvements that we've seen, we've extended the audit. Period. Regionally we started with just a little over a day on site. We're now up
to where we actually spend a week, a full week out with each
of these entities, with the first day being an audit team
meeting, with multiple days on site with the entity.

We've looked at notification and questionnaire
response times to try to extend those. Obviously, as we
ramp this program up, there was little time. And I think
we've heard from folks on that. We've tried to extend that
time. I think there's some things we can do to improve that
including sharing with some of the folks being audited.

If there are issues that come up in the
neighboring response, we need to share those with them ahead
of time so that they can be prepared to answer what is that
issue. It may well ultimately be resolved by the time we
get there.

As Brendon mentioned, the control room walk-
through has been moved forward. The tools list was
primarily developed because we couldn't take our laptops.
We usually work off of laptops in these audits and you
really can't take those into the control rooms.

So we've looked at developing some of those tools
and checklists for that.

(Slide.)

MR. HILT: We have revived the self-assessment
questionnaire and auditor's guide. We picked that up at our
June meeting. And maybe there's more things we can do to
them. But the questions have been reviewed and revised for
some clarity and preciseness, trying to get that better, get
them to where we get a better response.

We certainly agree we don't want to waste our
time trying to sort through what does the question really
mean? We want to be on target.

Discussion has encouraged both a self-assessment
and the neighboring questionnaires. We've also seen
tentities that will just say see attached and send you a
book. That's another issue. How do you get to balancing
that with what you want. That's what we're working on.

The format of both documents have been structured
so that they match between the auditors guide and the self-
assessment questionnaire. They weren't lined up. That's
helped the teams with the process flow. At least it's our
feedback that we've had from some of the folks who have been
on these audits.

Finally, we have developed some subteam guides
for when you break up into the multiple teams and what types
of things are you looking for rather than just the general
auditor's guide.

(Slide.)

MR. HILT: In terms of developing some
consistencies, certainly we appreciate the help that FERC
staff has had and the consistency that they bring to it.
We've been using -- initially we were using some contract folks. We're in the process of hiring full-time auditors. And, of course, we're looking for a very serious depth of experience with these people.

So it takes us a little time to do that. We have one on staff now and there are four additional planned, and we're continuing the interview process for that.

Certainly with some staff, permanent staff, we believe it's going to bring further consistency to the effort in what we're doing.

The program complements the compliance enforcement program, where we actually monitor for compliance with the standards -- with the templates. These are backed up by compliance audits with the narrow regional compliance programs.

We've separated this process with the readiness audit as a forward-looking process versus with compliance. Did you meet the standard? It's more looking at how you met it in the past rather than how could you be prepared and how could you meet it going forward.

As a result of that, we've separated these processes, the compliance audit process and the readiness audit process, into two separate processes, primarily due to the potential nature of enforcement actions that would come out of the compliance enforcement process.
The readiness audit program that we have is designed to improve control area reliability coordinator. And ultimately all the functional audit entities improve their operations as they strive for excellence.

We've not tried to include compliance enforcement actions and statements of noncompliance in these reports simply because that's outside. First off, it violates the disclosure guidelines that our board recently approved because people have to be given due process for compliance violations.

There are several reasons why these things will be kept separate.

Further, I agree we need sharper standards and we believe the efforts are working toward that. At the same time I think it's going to be difficult. You've heard a lot of things here today where you can see why we need to have subjective audits. And there's always going to be some subjective nature to these things.

For example, as Brendon mentioned a while ago, we can develop a standard that says you must have clear authority in your control room for the operator to shed load. You may even have to have something signed by a corporate officer in your control room to demonstrate to the employee where he can shed load.

But the question really is, as Brendon pointed
out, will they really do it? To measure that against the
standard is something I don't think we will ever be able to
do. That's something that's going to be the really
subjective judgment of a team of experts that's talking to
those particular operators.

CHAIRMAN WOOD: I'd rather be at that point,
knowing that everybody up and down the chain knew that it
was his call to make.

MR. HILT: Absolutely.

CHAIRMAN WOOD: I'd rather be at that point of
judging than back in the beginning, where we're not sure if
it's him we're judging or her.

MR. HILT: But there's certainly room for
improvement and we need to do that. We do find within this
process. And it's recently been added to the process.

(Slide.)

MR. HILT: Because of some of the reports you've
heard here today, we believe there are some standards
violations taking place that have been uncovered even
through this process. We've put a process in place where
the audit team is to notify me that there is potential
compliance violations to NERC standards in these audits.

I will then notify the regional compliance
enforcement program to include that as an assessment through
their program where they have regional due process where
people can object or dispute the finding of noncompliance through those regional processes. And it's very important even for areas where they have the R&S program where there are real finds and penalties in place for some of those activities.

Next slide, please.

Some of the other things -- again, we're continually looking at the size and makeup of the audit team being reviewed. We obviously have to look at the size, particularly when it comes to smaller areas. But we also want to look at the makeup of the team.

You heard a lot today about having the right experts on the team. How do we define that? We have some very minimal requirements saying we want people with five years planning an operational experience on these audit teams. We may need to define that even further.

Duration of the audit. That's being further reviewed. There's some suggestions that we need to spend more time even in the audit process. There are some concerns.

Obviously if we get beyond a week, continuing to have volunteers -- because if you go into a second week, it's a whole other issue than having someone volunteer to participate in an audit. So we need to take a hard look at that; and we will be looking at that.
Additional audit items are being considered. We think that every time we go through this process, we not only want to be looking at some key change, but we also may want to focus the audits and look at other key areas, look in depth in some particular areas -- how do we get the most out of them. But we will be looking at some of the other areas that we may want to add in.

So the questions we're asking folks, including things with a critical infrastructure protection, questions that aren't in NERC standards but are related to the NRC, I think we've uncovered some issues that certainly need to be addressed.

Finally, the recommendation tracking all of the recommendations coming out of these audits. We're working with our regions to develop the procedure now. There will be regional follow-up with NERC oversight on these recommendations. And we will be tracking them very openly as to what the standards of some of the implementation of these recommendations are.

Some of them, if they are areas for improvement, there are suggestions for improvement. And we may find that at the time the audit team was there it was felt that it was a very good suggestion to improve it.

When the entity takes a look at it, well, you know we've looked at it; here's why this isn't ultimately a
good thing for us to do. We can't discount that.

And I think you heard from Scott Moore today there was item there that he's just not going to be able to check off on. And we have to recognize that.

Finally, we're now beginning to look at how to really identify and disseminate best practices. Certainly the folks on that audit team have identified some of the things they believe to be best practices. Brendon has articulated some that he believes are best practices. And I think John has too. And I have as well.

But are those really the best practices? Is our opinion the one that really should be used to determine what those are? Or should we have some groups of technical experts sit down and look at those and say, you know, those really are best practices and maybe they ultimately do need to become standards within the industry? We're just now beginning to formulate how we're going to identify that.

CHAIRMAN WOOD: That's interesting because I wonder if you can't, I'd like to hear the experts, the top 10 percent of the country is being able to call what a spade is out here.

I'd be surprised -- rather than go through the tedious stakeholder process that we kind of dumb it down to the minimum standard. I wouldn't mind you guys just putting a real meaty, best practices list out there. Let's just see
where we go. You may get there a whole lot faster by just using this peer pressure.

MR. HILT: The question is, is that right? We're going to take a look at that.

CHAIRMAN WOOD: Are those the best practices? I wouldn't trust you guys if you can't agree on what it is, there may not be a best practice. It may be an upper quartile.

(Laughter.)

MR. HILT: That's right.

CHAIRMAN WOOD: I think all that being out there in the public domain with some context around it may be a great public service in addition to the individual feedback that the utilities got from this process.

CHAIRMAN WOOD: To further that point, because if you move to a consensus, aren't you also going to move to a de minimis standard.

MR. HILT: I don't think I'd look to a consensus. What I think I would look to do is to form a panel, maybe even some of the auditors, but some real technical experts to take a look, to scan through the reports, pull those things out and concur at least that yes, those are best practices -- not just the best practice for this particular entity.

We were looking at how to handle that. And I
think we need to clearly address how to identify and
disseminate those best practices in an efficient manner.
And now that we have 20-some reports, approaching 25 reports
out there, it's time to do that.

Next slide, please.

Finally, we previously had a reliability
coordinator audit process with a readiness audit process
focused on control areas. It was a new process. We now are
going to look to confine those into just a single readiness
audit process. This works into the functional model
implementation where we believe we need to have a single
process for auditing all of these entities for readiness,
each one having a module addressing the responsibilities
along the lines of John Kueck's responsibility matrix.

If you're registered to be a balancing authority
or a transmission operator, together we'll take those two
sets of questions we need to ask based on those
responsibilities, put them together, and that's the
questionnaire you'll get and that's the audit we will
perform.

We have to be real careful with some of the
reliability coordinator control area functions because,
again, questions you folks had about the independence of the
decisions -- we have to make sure we look at that at the
same time.
Training for auditors obviously is one of the issues that we need for consistency. In fact we're beginning to look at can we provide some training ahead of time and some medium for some of the volunteer auditors, because the first time they were exposed to the audit is either they've read an audit or they show up at the on-site meeting. If we can help prepare them for an audit and what's expected of them coming in, I think that's going to be a significant help.

And certainly for the future we're going to take all of the constructive feedback that we've had here today and give it some very serious consideration for including in the process.

With that I thank you.

MR. MCCLELLAND: The best we can do is open up the questions here at the table. And immediately following those questions we can open up to the audience.

CHAIRMAN WOOD: Where can we go with this matrix that John was working out? I'm troubled by that, but I know there's a lot behind that matrix. That's more of a story, but it's certainly crystallizing this lingering concern I've had really since the last summer's blackout. The who's-in-charge thing wasn't ever nailed all the way down.

MR. HILT: Certainly with functional unbundling, the functional model's been trying to catch up with who is
responsible. It's been a little bit of shifting sands.

CHAIRMAN WOOD: Is the functional model nailed
down that was brought up at the last board meeting in
Quebec? Was that just an amendment to the model?

MR. HILT: It was a second version of it. Mike
will correct me if I'm incorrect, but I think we really need
to work with the functional model, our functional model
experts. We have a functional model team that will be the
right body to go to with responsibility matrixes.

CHAIRMAN WOOD: Okay.

MR. MCCLELLAND: Are you ready to play Phil
Donahue? Well, let's see if we can wrap this up.

MR. HILT: Dave Cook just pointed out that
obviously I failed to do that. Just getting diversion zero
and some initial registration. We hope to provide some
clarity to this. It may provide some input into where we
really think things fall out in that responsibility matrix.

MR. MCCLELLAND: At this point -- I'm sorry,
Saeed.

MR. FARROKHpay: Dave, a couple of questions. I
think I was on one of the very first audits. I was on one a
couple of weeks ago. The process has certainly improved
quite a bit. Thank you for that.

You have a process for taking feedback from some
of the team members. I think he mentioned that you've done
surveys of the company and the entities being audited. But FERC staff has been providing feedback to you on and off. But is there a formal process for audit team members to provide feedback on the process?

MR. HILT: The only process that we had was -- obviously we've been incredibly busy trying to perform the audits and so the meeting we held in June was the key.

But we have discussed having a survey of audit team members in the volunteers' post-audit. We've just not developed that. We're considering that, but that's a possibility: just send them a survey afterwards and see if they can fill it out and give us suggestions on improving the process.

MR. FARROKHPAY: The other question I have is about some of the confidentiality issues that have popped up in at least one of the audits where a team felt the need that some issue needed to be communicated rather quickly to neighboring systems or reliability coordinators.

And I think confidentiality was an obstacle there. I thought NERC was going to look into that and develop a process to be able to get that done more quickly. I was just wondering if there has been any progress in that regard?

MR. HILT: I guess I'll let Dave talk about that.

We've talked about having some standard confidentiality
agreements we can put into play.

MR. COOKE: There are confidentiality agreements in place that govern the conduct of the audits in dealing with the materials. The incident that you talked about, Saeed, is the only circumstance that I'm aware of where we encountered a problem on those issues getting in the way of the kind of discussion that people need to have. And we had to work around for that particular one.

MR. FARROKHPAY: I think there have been -- at least in my experience -- a couple of other instances where, if there was a process, the committee would have probably used it to get some information to other entities. But being bound by confidentiality agreements, we were not able to pursue it any further.

MR. COOKE: We're in a situation -- I hate to keep harking back to the absence of authority behind this in a sense, but the information that we get, the information that participation that we have is on a voluntary basis and you're sort of striking a balance between drawing out sufficient participation to make it worth while and some pieces of that are the confidentiality issues. I'd be happy to learn more from you. This is the first I'd heard there were any other problems.

But if there were particular issues, I'll be happy to talk about those and see whether there's something
more we need to do.

MR. MCCLELLAND: Let's arrange that meeting following the conference.

David, you had a question.

MR. MEYER: I want to go back to the responsibility matrix for a moment. Brendon mentioned that there's a real problem about adequate information, sufficiently detailed information, on some of these points. So what's the way to go forward with that? Do more audits or do you go to a questionnaire that you would send out to all parties? Would a questionnaire really get you the information that you're looking for?

I'm not sure that would necessarily work. How do you fill the information gaps that are out there?

MR. KIRBY: I'm very in favor of it being as open as possible. So, you know, recognizing the confidentiality concerns, of course, are a driver coming in -- to what extent that constrains you, I don't know. Perhaps we could push back on that.

With some of the information it's hard to see why it should be, why there should be a concern about confidentiality. Maybe we should try to have pushback that would say we want to see more openness and try and allow that. We can ask more questions. You can get more feedback and it becomes more public.
MR. HILT: The issues I'm aware of on it relate to getting very specific system protective coordination device data for individual generation owners, real time data typically from the transmission owners and reliability coordinators.

We have a process in place that says essentially if any reliability coordinator requests any data point off the system, it is to be populated into the inter-regional security networks. That's a compliance issue. If they're not doing that, we'll follow through with a number of others.

I think it's more some of the other entities that are out there today and their obligations to provide data even to the control areas.

MR. MCCLELLAND: Let me just preempt. We need to wrap right now. We have some appointments. You fellows can collect the information after that conference.

In the interest of fairness, I'll allow one burning question from the audience. If you've got a question, let's just have one burning and we'll conclude the conference.

I apologize for the abruptness, but we do need to wrap up.

MR. LIVELY: Mark Lively. I'm a utility economic engineer.
Considering that FERC is financial regulator of the utilities and considering that this panel or these panels have dealt with reliability issues, I expected more comments linking the reliability with the financial, such as what Brendon had said where someone had raised a question as to who will pay for real power.

When IPP is told to move its real memory active power generation in response to a test, it didn't say anything about who's going to pay for the reactive power. It didn't say anything about how one control area provides electricity to another control area on a reliability basis and who pays for that.

And I'm trying to figure out how we handle those types of issues including when a reliability coordinator tells a control area to dump load, who compensates the control area for dumping that load.

Thank you.

CHAIRMAN WOOD: I know we've got a number approved in the last several months, a number of reactive power tariffs. And I think where Brendon referred that these have actually been, for example, in PJM, the reactive power is uplifted.

The real power I think you pointed out. There was no separate tariff treatment for real power because those were generally procured by the market participants
directly?

MR. KIRBY: In this particular case with this system there is no crossed. Reactive is provided as a condition of interconnection, so within the range required the system operator is free to move the reactive output of the unit without there being any economics to worry about, which gives the individual operator tremendous freedom.

In a sense no one corporately cares that he does it, so he's free to do it for reliability. For real power my understanding is from what we were told, we were not trying to chase the dollars. But if the operator felt the need to check the unit, its real power capability was adequate.

In that case the ISO would simply buy the power. It would pay for the real power shipped and dispatched, of course. You would expect that the system operator would be a little more reluctant to do that.

And in asking about that we were told, well, it turns out it did not become a practical problem because, due to the nature of the units in that market, they were moving in real power frequently enough that the market itself simply provided examples where the unit was moving, so the operator didn't have any units that he felt questionable about whether they would respond in real power. They moved frequently.
CHAIRMAN WOOD: We're seeing that a lot now. Particularly on the IPP side there's been a lot of tariffing that has been filed here to be compensated for reactive power.

MR. KIRBY: That would then become in this case, this example, of course. And these reviews were only looking at reliability issues. We're not particularly looking at the economics.

I guess my suggestion would be that certainly we've advocated that the system operator needs to have the ability to move units to find out are they really capable of moving.

And then there must be some mechanism, you know, if the guy gets paid for that. There must be a way to get money to pay for that. It was interesting in this particular case because it was just an issue of this is what's required to be interconnected. This is within the market rules.

From what the operator said there was no pushback from the units. They were more than happy to move whenever they were told to. There were consequences if you did not move. Then you were declared to be -- you weren't adequate so you had financial consequences. So the units were happy to move within the market rules.

CHAIRMAN WOOD: What we've got in light of, I
think, a couple of recent filings -- we've got a reactive power study group internally working to help inform the Commission decisions on a number of pending dockets as well as looking at the reactive power issue more generally because it fell out of a first energy area audit after the blackout that this monitoring, which I think was one of John's lines --

Nineteen -- I think that was nuclear, but it was one of those in the teens. It was monitoring the reactive power visibility on the system. It's kind of the unspoken commodity here because no one ever really pays for it. So you don't think you need it, but you have to have it.

But I don't think we're all the way there, Mark. I think you tee up a question that is alive and cooking in this agency as we speak. But it's bubbling across the entire country because I think it's a valuable consular service that people are not procuring and paying money for. It's just an auxiliary to being interconnected. And maybe that's not good enough anymore.

MS. MCKINLEY: Chairman Wood, I wanted to inform the audience and the audience who are listening at home that the many materials that were presented here I will be posting on the FERC Web site later this afternoon.

CHAIRMAN WOOD: Thank you, Sarah. Thank you for setting up our operations here. I'll thank Joe and the
reliability team for their work.

David, great to have you here. Tim, thanks for representing our friends up north. And you did it very ably with three hats. Did you have a statement?

MR. KUCEY: Just a brief statement from Canada. As co-chair of the Canada-U.S. power system task force and with an interest in promoting greater liability, Canada is pleased to participate in today's conference. Thank you for the invitation to do so.

Canada has a few general comments.

First of all, the power systems of several provinces interconnect strongly with adjoining American systems just south of our border. And much valued and valuable energy trading occurs over those inter-ties. Accordingly, the health and reliability of the overall eastern and western interconnect is important and of interest to Canada.

Secondly, we support the present route of reliability readiness audits that FERC is undertaking. And as they are an appropriate, fully proactive tool for the promotion of power system reliability, we also see the need for these audits to be continued on an ongoing basis.

Lastly, Canada shares the interest of the United States and other parties in making reliability readiness audits an important and effective means toward minimizing
and hopefully eliminating future system outages. We will continue to follow and participate in the development of readiness audits as additional audits are performed in Canada in 2005.

Thank you.

CHAIRMAN WOOD: Thank you, Tim. I thank all our panelists. And this last group was great. We appreciate Brendon -- you and John and the work you all have done and all the team have done for the audits and appreciate NERC having -- NERC including our group with you on the last 30 or so audits.

David, you've done a yeoman's job of this. The single most important step that the continent has taken since the blackout to basically not fall into the same trap of, well, we're going to talk about it and do nothing -- you did something. And I think what you did was extremely valuable for our country and for Canada as well.

I think the recommendations that came out of here were meant to be constructive. I think they sounded constructive to me from people who are part of this mix. And I want to make it -- you all work as a team.

Richard, thanks for the board. I again sat in on the board meetings for the last year and a half. You folks have definitely got the view of the customer as your principal role. And I appreciate how that permeates through
this whole organization with your leadership and all your advocacy, David.

It's really helpful and very appreciated. And I know sometimes it's not easy to hear criticism. I've been living in that role for nine years, so I get used to it.

(Laughter.)

CHAIRMAN WOOD: Not everybody does. But these recommendations come from people who are on the team and want to see it better. Already it is so much better than it was when it started. Isn't that true of the rest of life?

But the consequences are just so important. I think we saw last summer just how much that affected, how much it cost to get it wrong and how critical it is to get it right.

Again, consider us allies and supporters and advocates for all you're trying to achieve. And we'll be here by your side making it better and supporting it and bringing in the brigades when we need to and fighting off the dark forces if they ever show up.

That's actually a good line.

(Laughter.)

CHAIRMAN WOOD: I think we need to eat though. Have a wonderful afternoon. Thank you all for taking the time to come down here.

(Whereupon, at 1:30 p.m., the conference was
adjourned.)