

1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

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4 BRIEFING ON GRID STABILITY AND
5 OFFSITE POWER ISSUES

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7 ROCKVILLE, MARYLAND

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9 TUESDAY, APRIL 26, 2005

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11 The Commission met in open session at 9:30 a.m., at the Nuclear
12 Regulatory Commission, One White Flint North, Rockville, Maryland, the
13 Honorable Edward McGaffigan, Commissioner, presiding.

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15 COMMISSIONERS PRESENT:

16 EDWARD MCGAFFIGAN, JR. Member of the Commission

17 JEFFREY S. MERRIFIELD Member of the Commission

18 GREGORY B. JACZKO Member of the Commission

19 (This transcript was produced from electronic caption media and audio and video
20 media provided by the Nuclear Regulatory Commission.)

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1 STAFF AND PRESENTERS:

2 ROBERT GARVIN, Commissioner, NARUC

3 FRANK KOZA, GM, PJM Interconnection

4 GARY LEIDICH, President and CNO, FirstEnergy Corporation

5 JOSEPH MC CLELLAND, Director of Reliability, FERC

6 DAVID NEVIUS, Senior Vice President, NERC

7 ELLIS MERSCHOFF, DEDO

8 DR. CARL PAPERIELLO, Director, Office of Research

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10 JOSE CALVO, Chief, Electrical and I&C Branch, NRR

11 MICHAEL CHEOK, Asst. Chief, Operating Events Risk Analysis Branch, RES

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P R O C E E D I N G S

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2 COMMISSIONER MC GAFFIGAN: Good morning. Let me start by
3 explaining why Chairman Diaz is not here. There is a committee meeting on
4 Capitol Hill at which he is testifying. And Commissioner Lyons had a long
5 travel commitment that he was unable to break to be here.

6 But we are delighted to be here this morning. We have got two
7 panels. It could be a long day.

8 I want to mention at the outset that Commissioner Merrifield has taken
9 a very deep interest in this issue before the August 14th, 2003, grid event,
10 during the August 14th, 2003, event when he was the Acting Chairman and
11 since the August 14th, 2003, grid event.

12 I will save any comments I make on Mr. Merschoff until he is actually
13 directly in front of me. But this will be his last public Commission meeting.

14 And with that, I'm going to recognize Commissioner Merrifield for any
15 opening remarks that he would like to make. And then we will turn to the
16 panel.

17 COMMISSIONER MERRIFIELD: Thank you very much, and I
18 appreciate the opening comments you made about my interest in this area,
19 which is true. August 14th is an easy date for me to remember, because in
20 addition being the Acting Chairman that day, it was also my daughter's
21 birthday. That's one I certainly missed. I missed her birthday party and
22 certainly will not forget that one.

23 I think having an opportunity to review the testimony that we had
24 today, the written testimony and presentational materials from the panelists,

1 it would strike me that we have made a lot of progress among the Federal
2 government, among our state counterparts, among the nuclear industry and
3 our own staff in terms of ensuring that the electrical grid is reliable in the way
4 that we need and expect it to be when called upon to serve as an important
5 backup power source for the nuclear power plants that we oversee.

6 That having been said, I did note in a flavor through much of the
7 testimony that there seems to be a growing consensus that enforceable grid
8 reliability standards need to be promulgated through rulemaking or possibly
9 through legislation by Congress to ensure that the grid does not suffer yet
10 another blackout as we saw in August of 2003.

11 That, perhaps, is timely. We do have energy legislation that is moving
12 through the House now and there are significant efforts underway in the
13 Senate. And to the extent that it may be necessary for a Federally imposed
14 legislative solution to this, I think that is something that Congress ought to be
15 aware of.

16 I certainly would be interested in the observations of the panelists
17 today as to where we stand relative to that and whether further interest in a
18 legislative fix may be appropriate.

19 I look forward to the testimony and the questioning. I thank you.

20 COMMISSIONER MC GAFFIGAN: Commissioner Jaczko?

21 COMMISSION JACZKO: I don't have any comments.

22 COMMISSIONER MC GAFFIGAN: Why don't we proceed with the
23 first panel. I know we have one member who has probably been caught up
24 in traffic somewhere. I don't know whether you all talked in advance about

1 who goes first, but I think Mr. McClelland, because he is a Federal official, I
2 will recognize him first.

3 MR. MC CLELLAND: Good morning. My name is Joe McClelland.
4 And I'm the Director of the Division of Reliability of the Federal Energy
5 Regulatory Commission. It is my pleasure be here today to review the plans
6 and initiatives of this division.

7 Next slide, please.

8 As we all recognize, reliable and adequate supply of electricity is
9 essential to the health of the United States economy and to the safety and
10 well-being of our citizens. For this reason, FERC has publicly acknowledged
11 its commitment to the reliability of the nation's bulk power supply system.

12 In fact, our Chairman, Chairman Wood, specifically put reliability
13 issues at the top of FERC's agenda in 2004.

14 Reliability elements have been added to FERC's Strategic Plan. I will
15 recap a few as background.

16 The first is the allowance of cost recovery for prudent reliability
17 expenditures for security and safety.

18 The second is the oversight of the development of grid reliability
19 standards and their subsequent enforcement. This would be NERC's version
20 zero standards, which FERC has been deeply involved with. In fact, very
21 recently, FERC issued a policy statement in which it said that it considers a
22 part of good utility practice to be adherence to NERC's version zero
23 standards. And that is very significant for the industry.

24 The third is we have been coordinating with other agencies such as

1 the Nuclear Regulatory Commission, the Department of Energy and the
2 Department of Homeland Security. And our staff has been communicating,
3 and we have had good relationships and some project initiatives that I will get
4 into in just a minute.

5 Next slide.

6 To accomplish these goals, in October of 2004, FERC officially
7 reorganized its Office of Markets, Tariffs, and Rates, or OMTR, to include a
8 separate division dedicated to oversee reliability related issues. Working
9 within OMTR, the division of reliability will create rules for supporting and
10 encouraging reliability initiatives.

11 This office is uniquely equipped to recognize system deficiencies,
12 identify potential solutions and then to review and improve cost recovery
13 options to help pay for these system improvements.

14 If we can get the slide back up for a second.

15 You can see that -- it is probably hard to see on this slide. But it is
16 segmented into three groups. The groups are Planning. Planning works to
17 identify and investigate areas of congestion and constraint within the Nation's
18 bulk power supply system. In other words, on the grid.

19 Operations oversees the operation and maintenance activities of the
20 bulk power supply system.

21 And then logistics and security. And don't think of logistics as you
22 would normally think of it. Logistics is cost recovery. That is a way that we
23 will prompt industry to make these changes through cost recovery.

24 And also security is cyber security. We have been very active recently

1 in cyber security.

2 Next slide, please.

3 Although not organized as a division until October of 2004, the
4 reliability group was formed shortly after the August 14th, 2003, blackout in
5 January of 2004. In that time, it has finished several major accomplishments.
6 And I have listed some as bullets here.

7 The first is it was instrumental in supporting the issuance of the
8 Blackout Report. Now, this Blackout Report ended up with 46 specific
9 recommendations and directives to industry and to government to try to keep
10 this from occurring in the future.

11 The second is that we have been out on almost every -- and I say
12 almost every because just recently, we have stopped attending every NERC
13 audit. That's North American Electric Reliability Council readiness review
14 audits for the Nation's, the North American control areas and reliability
15 coordinators.

16 We had a follow-up conference on September 29th over at FERC to
17 see what was working with the audits and what deficiencies we found on the
18 audits themselves that may need specific attention.

19 We have participated in sponsored special studies, such as the
20 Natural Gas Pipeline Disruption Impact Analysis Study. That one is
21 significant. There's a lot of generation that is connected to the Nation's
22 pipelines. Those pipelines, if they are vulnerable, if there's a problem with
23 them, how many thousand of megawatts could be lost and what happens to
24 the grid stability in that circumstance.

1 We have done a responsibility matrix. We have put one together to
2 specifically list who is doing what between the control areas and the reliability
3 coordinators to eliminate overlap, and more importantly, identify any potential
4 gaps.

5 We have studied and issued subsequent recommendations for best
6 practices and information technology and management for the industry's
7 consideration.

8 Next slide, please.

9 Although much work has been done, much work remains to be
10 completed. And I can't emphasize that enough. There is a lot of work left to
11 do.

12 Several of our major initiatives are as follows:

13 Working with the Idaho National Lab, FERC has undertaken a study
14 for cyber security for the Nation's information technology systems pursuant to
15 the industry. That includes the Supervisory Control And Data Acquisition
16 systems or SCADA systems, to decrease vulnerability of outside attacks.
17 And these attacks come from both organized and unorganized parties.

18 Secondly, we are looking at transmission planning oversight including
19 extreme contingency analysis. Much greater than the -1 events.

20 Third, we have undertaken spare equipment investigations and
21 recommendations. This is important because in the grid itself, there are
22 components of that system that will take well over a year to manufacturer.
23 What happens if these components are lost? How much of the Nation would
24 see a bulk power supply shortage? What is the appropriate level of inventory

1 and what should we do to help encourage industry to get that into place?

2 Lastly, FERC is participating with other agencies for ongoing projects
3 to enhance our knowledge of the grid operations and increase our ability to
4 spot trouble.

5 Two such projects are appropriate for mention here. The first is an
6 NRC project that is designed to predict areas prone to outages through the
7 analysis of past events. FERC would like to lend its system modeling
8 capabilities to validate and perhaps enhance this effort. So we are working
9 closely with NRC staff.

10 The second is a DHS proposed project. It is a multi-agency project
11 whereby DHS is developing a visualization tool for the market monitoring
12 centers or the operation centers themselves. These will quickly and clearly
13 show anticipated outages anywhere in the Nation to less experienced
14 operators so that this visualization becomes obvious to all the agencies.

15 We all receive the information at once. This visualization then is
16 projected on the screens, and helps us all understand where the bulk power
17 supply shortages might be.

18 FERC is entitled to this information from industry. And because we
19 can get this information, we can then provide it, and we can all visualize this
20 together.

21 We are hoping that the NRC is accepting of this project and
22 participates with us.

23 We have other projects in the works also, and we would like to closely
24 coordinate and have been with your staff in order that the agencies don't

1 duplicate our efforts, and that we can all bring our synergies to the table and
2 help adjust these issues as a whole rather than in segments.

3 COMMISSIONER MC GAFFIGAN: Can I ask a clarifying question?

4 MR. MC CLELLAND: Sure.

5 COMMISSIONER MC GAFFIGAN: This must be proprietary, I mean,
6 the information displayed on this visualization tool must be, because these
7 companies guard what is operating, what is not operating, and all of that. So
8 this is a proprietary visualization tool?

9 MR. MC CLELLAND: Well, once -- if you get into a bulk power supply
10 shortage, an anticipated emergency, many of the protocols that you would
11 normally have in place are waived.

12 We will work with industry to make certain that we don't violate any of
13 those protocols. But in emergency circumstances, market manipulation or
14 market concerns, any proprietary concerns are usually waived.

15 We don't anticipate a problem with that. And this is a requirement for
16 entities to report this information to FERC as part of our oversight process.

17 So have been and are entitled to receive this information from
18 industry.

19 COMMISSIONER MC GAFFIGAN: The yellow light came on, but that
20 is partly my fault --

21 MR. MC CLELLAND: I'm almost finished. I can make it.

22 And the last slide, please.

23 All of us the regulators, the industry, the customers and stakeholders
24 have a common goal of a reliable and secure bulk power system. To

1 accomplish this goal, FERC has been coordinating our efforts with our
2 counterparts in Canada, the states, and other agencies such as the NRC.

3 In addition, FERC has been working closely with NERC, the regional
4 reliability councils, the customers and the stakeholders to identify and
5 attempt to correct system deficiencies.

6 Even non-jurisdictional entities are interconnected to the same North
7 American electric grid. It is in all of our best interest to work together, to
8 cooperate as much as possible, to participate in joint projects wherever
9 possible.

10 I think that is very important and that would send a strong message to
11 the folks involved, to the industry, to the stakeholders, to the customers and
12 to the other agencies that we are serious about improving the bulk power
13 supply system in this country.

14 Simply put, this effort cannot be accomplished alone. But with this
15 commitment by FERC to create a Division of Reliability to focus on these
16 issues and with participation from agencies such as the NRC, we can
17 accomplish these goals together.

18 This concludes my prepared remarks. Thank you for your time today.

19 COMMISSIONER MC GAFFIGAN: Thank you.

20 Mr. Nevius.

21 MR. NEVIUS: I'm David Nevius, Senior Vice President of the North
22 American Electric Reliability Council.

23 I did not prepare slides but I did prepare some written remarks which
24 are on the side table, and I hope that you all will have a chance to review. I

1 just would like to take a few minutes to comment briefly on a few of the
2 highlights.

3 Before I do, I would like to address Commissioner Merrifield's question
4 about the legislation.

5 NERC and a broad coalition of organizations has long supported the
6 need for reliability legislation to create a system of mandatory enforceable
7 reliability standards.

8 We have been at this for six or seven years now. Each time we get
9 very close and for one reason or another, the Comprehensive Energy Bill
10 fails to be passed.

11 A number of organizations or a number of individuals have suggested
12 possibly a stand-alone bill. We are still supporting including the reliability
13 language in the Comprehensive Energy Bill.

14 However, there is one aspect that has been added to the House
15 version of that bill I would like to bring to your attention. When CBO scored
16 the energy bill, they came up with what they thought would be the cost of
17 each portion.

18 They scored the reliability legislation, which we thought was
19 inappropriate because this is not money that will pass through government
20 hands. But the self-regulatory organization would collect fees to run its
21 business both at the North American level and at the regional level.

22 The House energy committee has included a cap in the version of the
23 legislation that it passed, a \$50 million cap.

24 I can tell you right now that with NERC's current budget and the

1 budgets of the ten regional reliability council members, we are already just
2 above that cap. This simply wont work.

3 We are hopeful that the Senate will not include a cap and that in
4 conference this issue can be worked out.

5 But it would make things quite problematic if it remains in the bill. So I
6 pass that on.

7 Now, to my remarks. Again, you have on the side some written
8 remarks.

9 I want to stress three things that NERC is involved in that I think are
10 very relevant to your areas of concern. Joe McClelland already mentioned
11 the reliability readiness audits.

12 Secondly, we are in the process of developing a reliability standard
13 that will address the coordination of nuclear plant licensing requirements with
14 the bulk electric system, how it is planned, how it is analyzed and how it is
15 operated.

16 And thirdly, we have signed a Memorandum of Agreement with the
17 Commission. And we are going to be signing shortly some appendices to
18 that MOA and initiating some collaborative work.

19 First on the readiness audits. Our program began right after the
20 blackout. We actually had done something very similar to these audits
21 earlier on in NERC's history. But we launched a much more formal program
22 after the August 2003 blackout to address primarily the deficiencies that were
23 identified in the blackout.

24 We are now conducting readiness audits of what we call reliability

1 coordinators and control areas, essentially those transmission grid operating
2 entities that are responsible for the bulk electric system.

3 We are doing this on a three-year cycle. We did about a third of the
4 entities last year. We are going to do another this year and finish up next
5 year. And then we will repeat the cycle.

6 In addition to identifying areas for improvement, we also identify good
7 things that are being done, examples of excellence.

8 We just released our first bulletin, or posted our first bulletin with a
9 number of examples of excellence. And I would refer you to the one that
10 deals with nuclear plants. And not that others are not doing similar good
11 things, but this one had to do with something that American Electric Power
12 has developed as a unique approach for analyzing transmission grid
13 conditions and keeping their nuclear plant operator informed of the results of
14 that analysis. That's all on our web site.

15 Also, the results of the audit reports are all posted. And I would
16 amend to the NRC staff's attention those reports, especially the sections
17 dealing with the coordination between the grid and the plants. I think there is
18 some good information there.

19 I would say that overall, generally, we are finding good results. But
20 there are some areas that can be improved and strengthened. And I think
21 working collaboratively, we can make that happen.

22 The second area as far as the standard, we are developing a new
23 standard to ensure that the transmission system has the capacity and
24 capability to support the safe operation of nuclear plants even if one of those

1 plants happens to trip. The system has to be planned and operated to
2 assure that voltage frequency and stability requirements of each plant are
3 met.

4 Where we are now on this is we have developed what we call a
5 standards authorization request. This is to develop consensus first on the
6 need for the standard and the content of the standard before we actually
7 draft it in the formal form that our standards take.

8 We are in the second draft. The comments on that draft are due
9 Monday, next Monday, after which we will most likely decide to begin the
10 formal drafting of a standard that is expected to be finalized and balloted and
11 adopted by our board by the end of this year.

12 Once our board adopts it, it will be put into our compliance monitoring
13 program. So we will actually be monitoring compliance of transmission
14 operators to this new standard.

15 I have detailed in my written remarks some of the things that are
16 addressed in this. I guess I would summarize by saying we have written it or
17 we have written the intent of the standard to address the unique
18 requirements of each plant, what appears in the design and licensing
19 requirements.

20 So the transmission operator is obligated or will be obligated to know
21 what those requirements are and to operate the transmission grid so as to
22 meet those requirements at all times, if even the plant were to trip off line for
23 some internal reason.

24 The third area I would like to touch on is the Memorandum of

1 Agreement. Both the Commission and NERC have an interest in ensuring
2 the reliable operation of the grid. And we recognize the importance of
3 working together.

4 Probably for the last five or six years, we have had regular meetings to
5 discuss trends in grid conditions. And a number of your staff, many of whom
6 are in the room today, have been at our offices to have these discussions.

7 We formalized that arrangement with a Memorandum of Agreement
8 that we signed last August that provides the general terms of cooperation.
9 And we identified several appendices that will be appended to that
10 Memorandum of Agreement.

11 We are getting close to signing off on those appendices. They will
12 cover communications and information sharing during and immediately
13 following an emergency.

14 We had some experience with the August blackout where that didn't
15 work quite as smoothly as we thought. I think I committed on that last year
16 when I was here. This MOU – this appendix will specifically address how we
17 are going to work together and share information.

18 Secondly, on specific event investigations and analysis. For example,
19 the outage in Arizona that affected Palo Verde.

20 Thirdly, the exchange of operational experience, data and information.
21 And in that regard, we actually are about ready to get underway with a joint
22 analysis of some grid-related operating experience and data. It's all
23 information that is publicly available on our web site and in our possession.
24 And some folks from your staff are going to be working closely with us.

1 I think it is good that we work together on this, so that you and we can
2 understand the grid performance together.

3 The third -- or the fourth area is participation by NRC staff in NERC
4 committee activities. And we already have a couple of your staff folks who
5 attend our regular technical committee meetings.

6 In summary, NERC, supported by the industry stakeholders and
7 stakeholder groups, is prepared to continue with these initiatives that we
8 have underway and provide leadership in developing the necessary
9 improvements and coordination.

10 The NEI, INPO, EPRI, NERC workshop that was held earlier this year
11 in Atlanta is an example of what the industry can and is doing to address the
12 important issue. And it is one in which the industry should appropriately have
13 the lead role.

14 Thank you. I look forward to your questions.

15 COMMISSIONER MC GAFFIGAN: Thank you.

16 Mr. Garvin, are you prepared to go ahead? Okay. Thank you.

17 MR. GARVIN: I want to lower expectations first. I'm a lawyer. I don't
18 run any systems, but I'm here to offer my testimony.

19 MR. MERRIFIELD: There is nothing wrong with being a lawyer.

20 MR. GARVIN: My name is Bert Garvin. I am a Commissioner at
21 Public Service Commission of Wisconsin. I serve as Chairman of the
22 Nuclear Subcommittee of the National Association of Regulatory Utility
23 Commissioners, NARUC. And I'm testifying today on behalf of NARUC.

24 On behalf of NARUC, I really appreciate the opportunity to participate

1 in this hearing today to inform the NRC of state regulatory commissions'
2 activities in the area of ensuring reliability.

3 In February of this year, we passed a resolution calling for state action
4 on mandatory reliability standards. In that resolution, we affirmed or
5 recognized the following:

6 That states have an obligation to ensure safe, adequate and reliable
7 electric service to retail customers; and that states exercise authority or
8 jurisdiction over the siting of transmission and generation facilities,
9 generation resources and generation adequacy.

10 While in many areas of the country reliability standards are diligently
11 followed, The North American Electric Reliability Council, NERC, and the
12 Regional Reliability Councils operate as voluntary associations that rely on
13 reciprocity, peer pressure and the mutual self-interest of all those involved to
14 ensure a reliable bulk power system.

15 NERC has a compliance program in place but lacks an enforcement
16 mechanism.

17 The U.S.-Canada Power System Outage Task Force's Final Report on
18 the August 14, 2003 Blackout identified seven violations of NERC standards
19 as among the root causes of the blackout and described in its first
20 recommendation as making reliability standards mandatory and enforceable,
21 with penalties for noncompliance to prevent future blackouts.

22 NARUC continues to support national comprehensive legislation that
23 includes FERC authority to enforce mandatory reliability standards for the
24 bulk power system that applies to all market participants.

1 After seven years of considering this issue, Congress has not yet
2 passed legislation to make electric reliability standards mandatory.

3 Some states have taken action through their regulatory commissions
4 to make those standards mandatory.

5 Some commissions enforce their orders through penalties, fines and
6 other sanctions.

7 And many states incorporated and have incorporated the National
8 Electric Safety Code and other Institute of Electric and Electronic Engineer
9 standards in their rules governing their operation of electric utilities.

10 Based on these observations, in our resolution, NARUC resolved to
11 take two actions. The first one was to encourage states to consider making
12 the NERC standards and RRC criteria mandatory for jurisdictional utilities.

13 And secondly, develop by our summer meeting, model orders and
14 legislation which states may use to make those standards and criteria
15 mandatory.

16 To give the Commission a better understanding of our involvement in
17 states and reliability matters, I would like to point out that NARUC actively
18 participates in NERC in several ways. NARUC and the states, we act as
19 active observers of NERC activity. NARUC and seven individual states are
20 registered as voting members of NERC. The states have two
21 representatives on NERC's Standards Authorization Committee, which
22 develops reliability standards. We also have two representatives on NERC's
23 Compliance and Certification Committee, which is the enforcement arm of
24 NERC.

1 The states also have representatives on standing committees of
2 NERC such as the Planning Committee and their Operating Committee.
3 State regulators also participate in regular NERC briefings versus their
4 webcast.

5 Recent briefings have focused on these proposed changes to the
6 NERC reliability standards and industry compliance with existing NERC
7 standards.

8 Finally, we have representatives on the NERC Stakeholder
9 Committee. So, obviously, NARUC supports NERC fully and we show our
10 support by keeping NERC committees staffed.

11 I would also like to note that we as an association also participate in
12 the North American Electric Standards Board. In that capacity, we do our
13 part to ensure that standard business practices in the industry do not
14 undermine reliability.

15 It is important to note that many states actively ensure reliability not
16 just at the transmission but at the distribution level. This area of state activity
17 in ensuring reliability is summarized in a recent 2004 survey that was
18 conducted by NRRI under the supervision of Robert Burns.

19 I would like to highlight some of those findings in that survey here to
20 give the Commission an even better understanding of the states' involvement
21 in reliability.

22 That survey was conducted between April and October of 2004. And
23 it was a follow-up to an identical survey that was done in 2001.

24 In the most recent survey, 41 states responded. In response to that

1 survey, some states reported new proceedings regarding reliability. It is not
2 surprising that a lot of that activity was the result of the August 14th blackout.

3 Following the blackout, there were reports, as this Commission is well
4 aware of, by the joint U.S.-Canadian Task Force and NERC. In addition,
5 hurricanes caused widespread outages in 2003 and '04. And for an
6 example, the Oklahoma commission conducted a reliability rulemaking
7 proceeding in '04 and Delaware set interim reliability standards through 2005.

8 According to this survey, this most recent one, several states have
9 formal standards on reliability and service quality. In fact, 24 states require
10 reporting and monitor reliability and service quality. Twenty-one states have
11 performance standards. And 15 states have established penalties for failing
12 to meet those standards or rewards for meeting standards.

13 And the survey found that most states performance benchmarks are
14 utility-specific, although Illinois and New Mexico reported uniform, statewide
15 benchmarks.

16 In response to this survey, Kansas as an example of the state that
17 stated there is insufficient conforming data to establish meaningful standards.
18 In addition, Iowa responded while it has no benchmarks now, it plans to
19 gather five years of data and then review standards. Typically, states that
20 have performance benchmarks use historical data to set those benchmarks.

21 Many states have specific requirements for tree trimming. Most states
22 responding to the survey cited the adoption of the National Electric Safety
23 Code with respect to tree trimming.

24 The states also have a variety of different power outage reporting

1 requirements. Twenty-five states require utilities to report the causes or
2 cause of outages. Twenty-three states require reports on the number of
3 customers affected by the outage. And 26 states require reporting on outage
4 duration.

5 Thirteen states reported that they have specific power quality
6 standards. Seven states reported that they account for service quality and
7 performance-based or incentive-based ratemaking, which has two more
8 states than in 2001.

9 In summary, the survey found an increase in state activity regarding
10 reliability over 2001 levels. Most states use performance standards, and
11 more states, although it is still a minority, use financial penalties and other
12 rewards to ensure reliability.

13 This concludes my testimony and I appreciate the opportunity to
14 participate.

15 COMMISSIONER MC GAFFIGAN: Thank you.

16 Mr. Koza? I hope I am close to right.

17 MR. KOZA: That's fine. Thank you very much. And I also would like
18 to thank the Commission for the opportunity to present this morning.

19 I am Frank Koza, general manager of regional operations at PJM
20 Interconnection. I am not a lawyer and I do have to run a power system. So
21 if you would like to switch places, we should talk.

22 MR. GARVIN: We can just highlight.

23 MR. KOZA: If we go to the slides, please, first slide.

24 I would like to first give a quick overview of PJM and then discuss

1 several issues that are very important to our nuclear owners in regard to the
2 interface between the grid and the nuclear power plants.

3 First on PJM integrations. If you are not aware of this, PJM has
4 expanded rapidly within the last two years here. In fact, the last piece of that
5 expansion will occur this coming weekend when Dominion Virginia Power
6 joins PJM.

7 Next slide, please.

8 This is an overview of the PJM market statistics. I apologize that this
9 does not include the latest data including Dominion. But I can tell you that a
10 couple of these statistics with Dominion included the top line. The number of
11 people served by PJM as of May 1st will be 51 million.

12 The forecasted peak load for this summer will be in excess of 130,000
13 megawatts. And the number of generation sources in PJM with the
14 Dominion integration will go up to approximately 1100.

15 At that point, PJM will be operating in 12 states and the District of
16 Columbia, not Wisconsin, however.

17 The pie chart at the lower right, I just want to touch upon that for a
18 moment, just to indicate to you the importance of nuclear power in PJM.

19 On an energy basis, nuclear power plants in PJM provide basically
20 one-third of the total energy. So nuclear power is basically the foundation on
21 which PJM operates.

22 Next slide, please.

23 This map indicates all the nuclear power plants currently in PJM,
24 including the Dominion plants that will be joining this coming weekend.

1 There are a total of 29. So you can see that nuclear power is a significant
2 portion of what PJM operates on an energy source basis.

3 Next slide, please.

4 I would like to mention a group within PJM that really is a key source
5 for PJM in the nuclear power plants to dialogue and communicate and
6 basically come up with the creative solutions that we think we have to put in
7 place to address issues on the grid.

8 That's our nuclear owners and operators users group. It is a group
9 that is formed as a feature of the PJM governance. Basically in PJM, if five
10 members have a common interest, they can form what's called a users
11 group. And the nuclear owners have done that. And the nuclear owners
12 users group has existed for a number of years in PJM.

13 We have broad participation. The second bullet highlights to you the
14 companies that are involved. As I mentioned, it is a key effort for us to
15 dialogue with the nuclear power plants so that we understand their issues
16 and they understand the grid issues.

17 I would like to next go to the -- to highlight basically three issues that
18 we keep hearing from the nuclear power plants in regards to grid interface
19 issues.

20 The first is cultural differences. There are significant gaps between
21 the communications language, the lexicon. I noticed there is an acronym list
22 on one of the handouts this morning.

23 Communications, though, might sound very basic and simple to you.
24 When it regards communications between grid operators and nuclear power

1 plants, it can actually get very complicated because we basically don't speak
2 the same language.

3 Beyond that, we have very different regulatory accountabilities. And
4 there are issues regarding the Code of Conduct that we just can't ignore.

5 Next slide, please.

6 To help try to address these issues, PJM in conjunction with our
7 operating committee, which is the grid operators and the nuclear owners
8 group, put together what we call a nuclear communications protocol. It is an
9 attachment to one of our PJM manuals. And you can see the web reference
10 for people who want to take a look at that.

11 It does talk about the various accountabilities that both the grid
12 operators and the nuclear power plants have regarding nuclear safety and
13 grid reliability. The philosophies are explained in some detail so that people
14 on one side of the business can understand what's going on in the other.

15 It also defines key terms, talks about specifically how we are going to
16 communicate in emergency events and gives regulatory background
17 information.

18 It certainly is not the final answer to what we think is needed, but it
19 certainly addresses part of the issue and helps to have us at least
20 communicate on a common basis.

21 Next item is post-contingency voltage stability. This is an issue that in
22 PJM has gotten a lot of discussion recently. Many of the nuclear power
23 plants in PJM have more restrictive voltage limits than the grid does. PJM
24 has a set of grid limits, but the nuclear power plants because it is contained

1 in their licensing documentation, may have post-contingency voltages that
2 are more restrictive than PJM's.

3 And the question for the nuclear power plants is they want to make
4 sure that their safety systems will work in those scenarios.

5 Next slide, please.

6 What we have added to the PJM manual, this is a different manual. It
7 has to do with transmission operations, though. We have language in here
8 that allows us to talk to nuclear power plants in ways, in essence, that we
9 would not talk to the normal generators. And that is because the importance
10 of sharing voltage information is critical to the nuclear power plant in
11 assessing and understanding and dealing with and mitigating voltage
12 contingency issues that may occur.

13 So we feel like we have given the leeway in our manuals to allow us to
14 facilitate those communications when there are voltage situations.

15 Next slide, please.

16 The next slide basically shows PJM standards in our operational
17 philosophy. Here again, I think PJM may have a little bit different philosophy.

18 We are very a conservative system operator, in that we will operate
19 post contingency for voltage violations or thermal violations that are identified
20 in our EMS system.

21 Now, regarding nuclear power plants, what that means is if the nuclear
22 power plant owner has identified and we're limiting or more restrictive limit to
23 us, we will operate to that limit and we will start generation pre-contingency if
24 needed to make sure that voltage violations will not occur.

1 The last item I want to talk about is outage coordination.

2 There is definitely interest in a nuclear power plant in discussing and
3 making sure that the grid operators or the grid transmission owners who
4 have to do necessary maintenance on the transmission system are
5 communicating with the nuclear power plants such that that kind of
6 scheduled work can be done in conjunction with nuclear power plant outages
7 if at all possible.

8 This is kind of new to the transmission owners, as I mentioned here.
9 They really don't schedule that way. They, for the most part, don't have the
10 discipline that the nuclear power plants have in this regard.

11 And what we are trying to do is provide requirements to them to
12 basically increase the discipline that they have or they put in place for
13 nuclear power plants scheduled work.

14 Next slide, please.

15 The coordination procedures are contained in our transmission
16 operations manual. We have very strict advance notice requirements. We
17 have a multistep analysis process to make ensure that reliability is
18 maintained, both when we switch the lines out for the maintenance work and
19 during the outage.

20 We have pretty wide dissemination of outage information, so basically,
21 both sides understand what's going on.

22 Next slide, please.

23 I have excerpted one sheet out of the transmission operators manual
24 that really focuses on unit breakers at nuclear power plants. Here they are

1 specifically identified in our manuals.

2 And the message here to the grid operators is if you are considering
3 doing work that will involve these circuit breakers at the nuclear power plants,
4 you need to be talking to the nuclear power plant directly, also to PJM to
5 make sure that we are coordinating those outages to the greatest degree
6 possible.

7 That concludes my presentation. I certainly would be interested in
8 trying to answer your questions.

9 COMMISSIONER MC GAFFIGAN: Thank you.

10 Mr. Leidich.

11 MR. LEIDICH: Okay. Thank you very much and good morning. My
12 name is Gary Leidich, President and Chief Nuclear Officer, FirstEnergy
13 Nuclear Operating Company. And I appreciate the opportunity to be here
14 today to offer my perspectives and really our perspectives from a nuclear
15 industry and operator of a nuclear facility.

16 I do have a list of acronyms. Sorry about that, Frank.

17 MR. KOZA: We do acronyms.

18 MR. LEIDICH: I would like to talk about really what my desired
19 outcomes are this morning, which is, first of all, to reiterate for everyone here
20 and while Frank mentioned it, I think it is of utmost importance that this is
21 really about nuclear safety.

22 And as we work on all these issues the most important thing from our
23 perspective as an operator of the facility, is to ensure that nuclear safety has
24 the highest priority regardless of sort of everything that's going on around us.

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So it is important to reiterate that.

Secondly, I would like to talk briefly about the industry activities. You heard a fair amount of that already. And also talk sort of conceptually about the importance of integration and coordination. And the fact that there is a very critical need here as we go through the next several months of the year with each organization working on its various pieces of improving grid reliability to ensure that we all know what each other's concerns are and that we all know what each other is working on in a level of detail that we avoid unnecessary duplication. But more importantly, that we avoid unintended consequences and if something does occur, that it could actually have grid reliability go the other way.

I think it would be useful to offer a historical perspective on the next slide. And while we all talk about the 2003 blackout, there is a blackout that probably a couple of us in the room remember, and that's 1965, and it was the great New York blackout.

Really, that was the genesis of a substantial effort in our industry to improve grid reliability. And really as a result of that blackout, there is substantial investment made by the utilities, and the transmission system was really developed significantly in the late '60's and early '70's in order to back each other up in the event of a similar situation that occurred in New York.

Investments were made. Substantial investments were made. And the focus of the industry was reliability and grid reliability. And, of course, as

1 we all know, since then market forces have been a substantial influence and
2 have actually taken a front seat, perhaps, as a result of the influence of
3 deregulation over the industry, and reliability has taken some other seat.

4 And as a result now of the 2003 blackout, we see ourselves migrating
5 back towards the fundamentals and emphasizing reliability.

6 So there is a lot to be learned from history here. And I think the
7 actions that the industry is taking and the various parties are all taking are
8 heading towards repeating that situation where we ensure grid reliability has
9 the highest priorities.

10 In terms of the next slide, I want to talk a little bit about what the
11 industry is doing. Most of you are familiar with the Institute of Nuclear Power
12 Operations and a significant operating event report that was issued in 1999.

13 In December of 2004, there was an addendum that was also issued
14 which put additional requirements on the nuclear operators. Those include
15 the need for formal interface agreements, a recognition that the loss or
16 degradation of the grid requires substantial amount of analysis, evaluations
17 and formal procedures and communication protocols.

18 That there needs to be a lot of interaction between the grid designer
19 and the plant designer, not just the operator and the operator.

20 And that the operators of the grid and the operators of plant need to
21 be co-trained. They need to understand each other's world to a greater
22 extent than they have, perhaps, in the past.

23 And that there is also a lot to be gained in terms of sharing operating
24 experience.

1 These are some of the fundamentals that INPO has put in place. And
2 most importantly, they are doing formal review visits at each of the nuclear
3 operating facilities and giving feedback to the utilities on areas for
4 improvement as well as strengths.

5 Also, the industry has improved its coordination in many respects.
6 And you heard a lot of examples of that already in the testimony offered this
7 morning. NERC is working on two fronts with the readiness reviews and the
8 audits, and improving the reliability as a result of those processes, and also
9 working with the industry on a new reliability standard as it relates to nuclear
10 power plants.

11 I think the Atlanta workshop where I was given the opportunity to give
12 the keynote address was a watershed event for this industry. And there
13 needs to be many more forums in the future where we can all share our
14 information, share what we are doing, share responsibilities, accountabilities
15 and authorities, again, so we can avoid duplication and ensure that
16 unintended consequences really don't occur.

17 There have been a lot of event reviews and significant collaboration
18 with the NRC staff. And as I'm sure you are aware, there is an industry task
19 force under NEI which is working on the issues as well.

20 I have a slide in a minute that talks about that task force.

21 In terms of utility actions, I think it is very easy to say and obvious to
22 conclude but it needs to be said anyway, that the August blackout has
23 caused substantially heightened awareness in our industry. There is not any
24 utility, and of course, particularly FirstEnergy, but there is not any utility that

1 has not been significantly impacted by the August blackout in terms of
2 understanding the precursors to the event, understanding the response to
3 the event and improving their operations accordingly.

4 And while the responses are varied, I think utility executives have all
5 been focused through the NERC process and a variety of other mechanisms
6 on ensuring that they are doing everything they can to ensure maximum grid
7 reliability.

8 That includes, of course, the important aspect of being able to earn a
9 financial return of, and a return on, the investment associated with
10 transmission. And we are encouraged by the activities of Congress and
11 FERC in that regard.

12 There have been substantial enhancements. These are varied across
13 the industry. But certainly transmission control systems have been
14 enhanced.

15 We have invested substantial dollars as have others in improving their
16 control system.

17 Line and station maintenance has taken on a whole new look. And all
18 utilities have focused on improving their technologies, particularly for line
19 maintenance. We have seen practices not only in FirstEnergy but Dominion
20 Resources and a number of other companies on improving line maintenance.
21 And most importantly, there have been improvements in communication
22 protocols, but much more remains in communication protocols. And I think
23 that is an area of focus that NERC as well as the utilities are working on, and
24 of course, INPO is reviewing to ensure that the communications between the

1 grid operator and the plant operator all the time is there, not just in
2 preconditions for emergencies, but all the time, whether it's in line
3 maintenance activities or whatever.

4 And while there are Code of Conduct issues, I think it is very
5 straightforward, and we need to ensure ourselves that we keep it
6 straightforward to keep the Code of Conduct issues, that is the marketing
7 influences, if you will, separate from nuclear safety, above all, and also
8 separate from grid reliability.

9 And I think when you get down to the details of the Code of Conduct
10 issue, it really is fairly straightforward to separate those issues. And we need
11 to be sure as an industry that we avoid a proverbial red herring with the Code
12 of Conduct and that we somehow decide that we should not be talking to
13 each other for the wrong reason when absolutely we should be talking to
14 each other for the reason of nuclear safety for grid reliability.

15 Frank mentioned the PJM approach that we have taken on Beaver
16 Valley and the Code of Conduct issues there is. It's a very straightforward
17 process and very workable process.

18 So once again, we need not get wrapped around our axle, if you will,
19 on Code of Conduct issues.

20 I do want to talk a bit about the industry task force. As you can see on
21 the next slide, we have surveyed the loss of offsite power events and have a
22 comprehensive inventory of those events and the impact on plant licensing
23 basis. And NEI is working with the NRC staff in that regard.

24 We will as an industry through NEI be responding to comments on the

1 NRC draft generic letter. And of course, we are staying very closely coupled
2 with the NERC activities, both the audits and what we believe is the most
3 important thing, and that is the development of a standard for grid operation
4 and plant operation interface when it comes to nuclear power.

5 On the next slide, I have -- pardon me, Frank -- a list of acronyms,
6 although these are substantially more familiar to all of you.

7 The point of this slide is really to define what I believe one of the
8 problems could be if we are not careful.

9 If the fundamental driver is nuclear safety and secondary driver is grid
10 reliability, which is really what this is all about, what we have to ensure is that
11 we all understand each other's role, and that that role is fairly precisely
12 defined, and that that role addresses the concerns of that particular
13 organization, whether it is the regulator, whether it is NERC, whether it is
14 FERC. And we can go on and on. The particular role of the particular
15 organization needs to be well defined and well understood. Then solutions
16 brought to bear relative to that organization's concern.

17 And that those solutions are not duplicative or provide overlap of other
18 organizations that are doing very similar activities.

19 So we would urge all the parties, the Commissioners as well as my
20 colleagues at the table here, to be sure that we all know what each other is
21 worried about and that we all know what each other is doing, and that the
22 solutions fit problem, and that the solutions are well articulated and well
23 defined to promptly solve the issues and not be duplicative.

24 I offer a couple of examples of unintended consequences that could

1 occur. There is dialogue going on between the industry and NERC right now
2 on whether we do testing of our nuclear units for reactive capability. Most of
3 you are very well aware that actually a couple of events have occurred as a
4 result of those testing criteria.

5 So, are the models that NERC is using sufficient for reactive capability
6 or do we need to test it?

7 From a nuclear safety perspective we would offer that they are
8 sufficient and that testing would not be good for nuclear safety.

9 That is an example of where the organizations don't closely work
10 together. We could head off in the direction that it not only hurts grid
11 reliability but nuclear safety as well.

12 Also, the difficult question of if there is pre-emergent condition on the
13 grid, do we keep the nuclear unit on or don't we. And that requires a
14 tremendous amount of coordination and communication and criteria that we
15 mutually agree to under what circumstances we would keep the unit there or
16 not keep the unit there.

17 Those are a couple of examples that I would offer where coordination
18 is of utmost importance.

19 Finally, I reiterate clarity and coordination is of fundamental
20 importance to us. There has been substantially increased awareness.
21 Reliability, I believe, has improved as a result of that. But there is more to
22 do, and I think we have all said that and we all need to work in that direction.

23 Thank you very much.

24 COMMISSIONER MC GAFFIGAN: Thank you.

1 Under Commission procedures, Commissioner Merrifield has the first
2 round of questioning today.

3 COMMISSIONER MERRIFIELD: I think given the nature of the
4 discussion we have had this morning, I think there has been lot of progress.
5 A number of MOAs or MOUs have been undertaken. And I think that is
6 bringing us closer to the point.

7 Perhaps, to quote Mr. Koza, we can break down some cultural
8 differences in terms of understanding what each of us needs.

9 As a general matter, I would like to think of myself as a person who
10 refers to the glass as being half full rather than half empty. And I think,
11 indeed, we are more than half full.

12 That notwithstanding, last year we issued a temporary instruction TI
13 2515/156 to our licensees to gather how they were preparing themselves for
14 the summertime period of operations related to reliability.

15 In the analysis that our staff conducted on those responses, and this is
16 included in the draft and generic letter that we will be ready to issue later this
17 spring, I am going to quote a couple of parts.

18 "The staff found a good deal of variability in the TI responses on the
19 use of the nuclear power plant transmission system operating communication
20 protocols. Some licensees appear to be relying on informal NPPTSO
21 communication arrangements and long-term grid studies without realtime
22 control of operation to within the limits of the studies to assure offsite power
23 operability."

24 Another excerpt on page 7, "The staff found a good deal of variability

1 in the data collected in accordance with the Temporary Instruction regarding
2 grid reliability evaluations performed before taking risk significant equipment
3 out of service. Some NDPs communicate routinely with their TSOs once per
4 shift to determine grid conditions. All others rely solely upon the TSOs to
5 inform them of deteriorating grid conditions and do not inquire about grid
6 conditions prior to taking risk significant equipment out of service.

7 "Some do not consider the NPP post trip switch yard voltages in their
8 evaluations, and some do not coordinate risk significant equipment
9 maintenance with their TSOs."

10 That to me -- and there is further evaluations in the staff's summary
11 detailing -- and I won't go into the details of it, but summarized a variety of
12 issues where there still is part of that glass to be filled.

13 So I guess my first question coming out of that would be go to Mr.
14 Leidich. How are we going to bridge some of these gaps, because I think
15 some operators have made substantial progress, others have not?

16 MR. LEIDICH: Yeah. I think there is work to do, first of all. And I
17 certainly, given my exposure to the issue, and the industry recognizes that
18 there is variability out there.

19 And I think that David would say the same thing in terms of the audits
20 that they have done and communication protocols.

21 The two methodologies that I believe are underway, first of all, are that
22 NERC audits and the reviews there that are going on there.

23 And secondly, the INPO review visits. The INPO review visits do look
24 at communication protocols. They do provide an assessment of whether or

1 not there are written procedures in term of frequency, breadth and depth of
2 those communication protocols.

3 And as those review visits proceed through the process, they identify
4 back to the utilities whether or not there are gaps that need to be closed.

5 I think the overall issue that I see coming out of that is a comment I
6 made earlier about the Code of Conduct, and the fact that what we need to
7 do is -- and these are my words -- but sort of clear the smoke on the Code of
8 Conduct and not use that as some sort of a wedge and say we can't
9 communicate because, but we need to communicate with respect to nuclear
10 safety and grid reliability and here's how we are going to do it.

11 That is where a fair amount of the variability has actually occurred is
12 because of what I would call a variety of interpretations on Code of Conduct
13 and its impact on reliability communications.

14 In the case of PJM, and certainly Frank can add to this, it is a fairly
15 clear set of guidelines. And in the PJM pool, everybody plays. That's the
16 way it is. Other organizations have different approaches, if you will, and
17 different outcomes as a result.

18 COMMISSIONER MERRIFIELD: To quote some of your comments
19 earlier, obviously, nuclear safety takes a front seat on these issues. And to
20 the extent we don't have that uniformity and we talked a little bit today about
21 some of the reasons for that, it does create some of these gaps. So I
22 appreciate your comments there.

23 Mr. Nevius, I don't know if you want to fill in or respond to what Gary
24 said or any comments you may have on the same issue. We have got some

1 gaps and there are some differences. How are we, from your eyes, bridging
2 some of those gaps?

3 MR. NEVIUS: I agree with what Gary said about the audits that
4 NERC does and the reviews that INPO does are a way to get at where the
5 areas for improvement are.

6 I think sharing examples of excellence, sharing practices that work in
7 different environments, whether you have an RTO or an ISO or you have a
8 more traditional one-on-one relationship between transmission operator and
9 nuclear plant operator.

10 One of the regional council members of NERC, the Southeastern
11 Electric Reliability Council has organized a workshop late in May to address
12 this transmission nuclear interface. And not only are they having nuclear
13 plant operators and grid operators from within the region, but they are inviting
14 others from other regions to participate and share practices on how they are
15 addressing these communications issues.

16 And I think it's through that sharing, operator to operator -- the
17 workshop that we participated in that was put together by NEI and INPO in
18 Atlanta earlier this year, it was an excellent coming together of plant
19 operators and grid operators. We wore different colored name tags
20 depending on whether we were from one side of the house or the other.

21 But we could see people talking in the halls on the coffee breaks. And
22 this is where it is going to happen, by bringing people together in the industry
23 to share issues and problems and solutions.

24 We are specifically citing examples of excellence in all areas of

1 reliable operation, and we singling out those cases where it involves this
2 nuclear grid interface.

3 So that plus the standard we are working on, we are doing some
4 work -- we are working with the NEI grid reliability task force as well sharing
5 practices and communication protocols.

6 So that's how it is going to happen.

7 COMMISSIONER MERRIFIELD: I appreciate that. And certainly, it
8 goes without saying that hopefully that talk and that discussion can manifest
9 it into some continued improvement.

10 I would expect and hope that after we issue our temporary instruction
11 this year, we go through this summertime period and we do our analysis of
12 our staff, that the review that we do in the next wintertime period would show
13 that there has been a significant reduction in some of those issues that we
14 identified this past time around.

15 Mr. McClelland, to go back to our lexicon, I'm very familiar with our
16 regulatory framework. I'm honestly not as familiar with FERC's. But
17 nonetheless, we have got very good protocols on the staff-to-staff level.

18 You talked about the FERC order of February 9th in which you
19 supplemented your reliability policy by making clear the term, good utility
20 practice, including compliance with NERC's reliability standards.

21 For someone who is not as familiar with NERC procedures, what is
22 the outcome of that particular order and how is that going to change and
23 effectuate the way in which utilities are operating with these issues?

24 MR. MC CLELLAND: That is a good question. We are working

1 through that now at FERC.

2 On the very first level, if an entity is guilty of not following good utility
3 practice, they are in violation of their open access transmission tariff.

4 At that point FERC can be involved from a government standpoint.

5 We can discover this on our own independent audits. We can
6 discover this through complaints brought to the Commission itself.

7 At the very least, FERC can position in order to put that entity on a
8 watch list, if you will, sort of the same as the NRC watch list.

9 COMMISSIONER MERRIFIELD: We don't use watch list any more
10 here.

11 COMMISSIONER MC GAFFIGAN: We have column four.

12 MR. MC CLELLAND: We will probably go back to your prior days,
13 because we can take an entity that is in violation and say to that entity you
14 have had repeated violations -- now this would be an extreme case -- but you
15 have you have had repeated violations of version zero standards. Because
16 you have had repeat violations, FERC now finds that you have been deficient
17 with good utility practice. We will place you on a watch list.

18 That is substantial in today's world.

19 Lenders lend on the basis of good utility practice in a lot of cases.
20 When a lender sees a clear liability to the entity that it is loaning the money to
21 as far as being in violation of good utility practice, it can cause problems for
22 that entity.

23 So the very least that we do by finding that entity in violation of good
24 utility practice under the OATT, does have serious, could have serious

1 ramifications for the entity itself.

2 COMMISSIONER MERRIFIELD: So it is not a direct action on the
3 part of FERC? It is not like you are issuing a enforcement order?

4 MR. MC CLELLAND: We could. We could take that step.

5 When we conduct, say, an OMOI audit, our Office of Market,
6 Oversight and Investigation is out on a routine audit for market reasons, if
7 they find repeated violations of, say, NERC procedures and where the entity
8 may have gamed the market through those violations, that brings about an
9 enforcement action, a traditional enforcement action from FERC.

10 That enforcement action, then, could be written to capture those
11 NERC violations also. It is not unthinkable that an entity could use reliability
12 related issues to help manipulate the market. That has been alleged in the
13 past.

14 COMMISSIONER MERRIFIELD: Even though FERC has gone ahead
15 and taken this action by issuing this particular order, I presume it does not
16 take away from the overall, my understanding of the overall consensus of the
17 Commission that we still need an actual enforceable reliability standard?

18 MR. MC CLELLAND: Absolutely. Absolutely.

19 Many would say and our Commissioners and Chairman would agree,
20 we are at the edge of our jurisdiction with these actions.

21 MR. MERRIFIELD: Mr. Garvin, I am -- at the beginning of our
22 presentation, I did make some mention about the issue of mandatory, of the
23 mandatory overall nature of enforcement.

24 In reviewing your testimony, you did have, I think, a very good point

1 about the fact that after seven years of considering this issue, Congress has
2 not passed legislation to make electric reliability standards mandatory.

3 What is the position of NARUC on mandatory electric reliability
4 standards?

5 MR. GARVIN: Well, our position has been fairly consistent, I think.
6 And that is to encourage any effort at the Congressional level to mandate,
7 make these standards mandatory and enforceable.

8 I mean, at the state level, there is a tremendous amount of
9 transformation going on in the bulk power market where states like
10 Wisconsin -- I can speak for it -- we have given up a lot of our jurisdiction.
11 You know, as we set up a day ahead in realtime markets for energy, PJM
12 and now MISO has started up.

13 So, from our perspective, I mean I am speaking for Wisconsin and a
14 number of state regulators, we want a blunt tool that FERC can use to
15 enforce these standards, particularly in light of -- you have seen what
16 happens when there is one incident, the amount of lost activity that
17 happened in 2003.

18 That is something that states take very seriously. And that's why I
19 think at the state level, we are urging some clarity from the Congress to put
20 these reliability standards in place and make them mandatory.

21 COMMISSIONER MERRIFIELD: I know the states are trying to do
22 their best within their own powers to effectuate that. You mentioned the
23 study by this National Regulatory Research Institute.

24 I guess 41 states, you mentioned, had responded to that. At least in

1 regard to those that did respond, of that it looks like a bare majority, 24
2 states require reporting and monitoring of reliability and service quality.

3 So there is a recognition there that a lot of progress has been made,
4 but there still remains a gap where there is not continuity within the states on
5 that kind of reporting and performance standard requirements.

6 MR. GARVIN: I think from a state perspective, and I think the fact
7 that -- get back to making the standards mandatory, states are doing what
8 they can. But there's a patch quilt of activity here, and I think that's why there
9 needs to be a Federal answer on some of these -- I mean, states can only do
10 so much, in my opinion, on those issues.

11 COMMISSIONER MERRIFIELD: One last question real quick and I
12 have to pass.

13 Just to clarify for the record, I take it that there is consensus -- and
14 please correct me if I'm wrong -- that there ought to be Federal legislation
15 dealing with the issue, dealing with the issue we have been talking about
16 today, which is mandatory standards.

17 Is there anyone that disagrees with that at the table?

18 MR. LEIDICH: Well, if you are asking me to represent the entire utility
19 industry, I am not sure I can do that. But I can certainly -- I guess my own
20 perspective on this, Mr. Commissioner, is that having gone through the post
21 65 era, one of the issues -- and I was heavily involved in ECAR at the time --
22 was that there does not seem to be any teeth in this process. That
23 organizations could not comply and there was nothing that came out of that.

24 My personal opinion would be some sort of a mechanism that gives

1 teeth in the process. Whether that is legislation or not, I think is very
2 warranted.

3 COMMISSIONER MERRIFIELD: This is not in our direct jurisdiction.
4 But having worked up on the Hill for a while, I came to realize there are times
5 when a Federal standard is needed and sometimes when they are not. I
6 think this clearly falls in the former not the latter.

7 COMMISSIONER MC GAFFIGAN. Thank you.

8 Commissioner Jaczko.

9 COMMISSIONER JACZKO: I would follow-up where Commissioner
10 Merrifield was ending and talk all about the need for Federal legislation. One
11 of the things that many of you brought up is the importance of communication
12 protocols. And I think almost every person who testified talked about kind of
13 developing a set of protocols between the nuclear arena with transmission
14 entities and the nuclear power plants.

15 Is that an issue that is at all addressed in the legislative proposals,
16 these issues of communication protocols, specifically in the nuclear sector?

17 Whoever wants to answer that.

18 MR. NEVIUS: It is not in the legislation, per se. But the legislation
19 provides for the creation of an electric reliability organization to set
20 standards. Among those standards could be certain requirements such as
21 the one that we are developing now regarding that interface between nuclear
22 plants and their respective transmission operators.

23 And we do address in the draft standard authorization request issues
24 of communication protocols between the licensee and the entities

1 responsible for the operation and planning of the system.

2 So it would be subsumed as part of the overall set of standards that
3 would be established, monitored and enforced once the legislation is
4 enacted.

5 COMMISSIONER JACZKO: So that would be -- I guess the point is
6 that would be -- some type of enforceable standard would exist with those
7 communication?

8 MR. NEVIUS: Right. And it would apply -- at least the way it's being
9 crafted now, it would apply to the transmission operator not to the nuclear
10 plant, per se.

11 COMMISSIONER JACZKO: Sure.

12 MR. NEVIUS: Before we restructured the industry, this was all part of
13 the integrated utility system and there were not the same issues that exist
14 today.

15 That's why we are sort of rebuilding those linkages by requiring the
16 transmission operator to have these protocols in place.

17 COMMISSIONER JACZKO: Anybody else want to comment on that?

18 MR. LEIDICH: Just to sort of amplify on what David said, I think the
19 nuclear side of that equation, and there are already gaps in terms of
20 communication protocols from a plant perspective, those gaps are being
21 filled by the INPO review visits that are underway right now.

22 So between the two processes, the gaps on both sides, if you will, are
23 being closed.

24 COMMISSIONER JACZKO: The next question I have is for Mr.

1 McClelland. You talked about, I guess it was the responsibility matrix that
2 you developed or you are working on to identify gaps. Can you give a little
3 more specifics about what some of those gaps are?

4 MR. MC CLELLAND: Sure. Prior to NERC's functional registration,
5 and NERC has had a functional registration for responsibilities between the
6 various entities of the NERC organization, there was no centralized listing of
7 who so doing what as far as were there any overlaps or any gaps between
8 the reliability coordinators or the transmission owners themselves.

9 Every audit that FERC attended, which was every NERC audit, we
10 tracked those responsibilities and we assembled a matrix that we have at
11 FERC. And that matrix helps us to understand, at least prior to the functional
12 registration that NERC conducted, what entities were conducting which
13 responsibilities, and where there were gaps or overlaps. And we did find
14 gaps and overlaps.

15 COMMISSIONER JACZKO: Do those gaps still exist?

16 MR. MC CLELLAND: The functional registration that NERC has
17 conducted has eliminated or addressed those issues in great detail.

18 To my knowledge, most of those issues, if not all, have been
19 eliminated.

20 However, there still will be variances. I think it is important to say that
21 on the NERC audits themselves, when our folks attend those audits and
22 when the NERC team is questioning the transmission owners, the control
23 areas and reliability coordinators about communications with nuclear power
24 plants, per se, there are variations between entities. And those variations

1 need to be addressed.

2 COMMISSIONER JACZKO: I think as I hear a lot of the testimony
3 one of the things that is clear, obviously, the goal of Federal legislation is to
4 ensure that we have a reliable grid that does not -- unfortunately, Federal
5 legislation can't necessarily ensure that the grid will be reliable 100% of the
6 time.

7 One of the things that I think is crucial certainly is this issue of
8 communication. But I think it is also important that the system operators
9 have a good understanding in particular of the world that we deal with most
10 specifically, which is the nuclear world. It seems like some things are going
11 on in the area of communication and people have talked a lot about the
12 dialogue.

13 One of the things I want to ask specifically about, and I think this was
14 something that you had mentioned, Mr. McClelland, is the operator
15 performance on the transmission side. And one of the things I'm wondering
16 is what training exists, who is responsible for ensuring that training exists and
17 establishing training standards for those operators? And then, is there
18 specific training to deal with nuclear power plants?

19 Again, anyone who wants to answer that question, if they could.

20 MR. KOZA: I will just explain what we do. We have a substantial
21 training program. Basically, one of our shift teams is on training all the time,
22 every week.

23 It happens this week we run a dispatcher seminar, where not only our
24 operators but all the member company operators and the generation

1 operators participate together in a joint training.

2 We conduct nine separate sessions of that so all the various shift
3 teams in the member companies can attend. And because of our
4 geographical reach now, we have actually extended that for sessions in
5 Chicago area, Richmond area, and Pittsburgh area.

6 So, as far as specific training goes, I guess we recognize that we had
7 to do more with regard to the communications between nuclear power plants
8 and the grid operators. And that's why we prepared the protocol that I
9 alluded to in my presentation, basically to give the background that we
10 thought was necessary on each side.

11 And kind of standing in the middle, we hear misunderstandings on
12 both sides. So it is really important to address those kinds of things with very
13 specific kind of requirements.

14 The other thing I will mention is we recognize, we had to kind of get
15 out of the box relative to training. Dave Nevius mentioned one of the items of
16 excellence, in fact. The one that is cited to PJM there is a program that we
17 started last year. And we took it out of the airline industry. We got away
18 from the utility and nuclear business and went to the airline industry for a
19 team training concept that has been very successful for us.

20 That training has been provided to all the PJM operators, and also
21 provide elements of it to the member company operators.

22 So that, at least, gives you an idea of what we felt is necessary to
23 address the issue.

24 COMMISSIONER JACZKO: And, perhaps, Mr. McClelland, I don't

1 know if you can answer -- it is good to hear that work is going on. One of the
2 things that I think is clear and certainly that we found in our surveys is that
3 there is not and we don't have uniformity yet. That is an important goal.

4 So I'm wondering who ultimately then is -- is there anyone responsible
5 for establishing minimum training standards for operators.

6 MR. NEVIUS: Right now we have a program to certify electric system
7 operators. It is done on exam basis. But it is a very fundamental level. It is
8 basic understanding of the NERC standards and basic understanding of the
9 principles of interconnected system operations.

10 We are going to be hearing a presentation next week from the group
11 that operates that program. It's an independent group. It is called our
12 Personnel Certification Governance Committee, in order to conform to
13 NOCO standards for a credit --

14 COMMISSIONER JACZKO: I'm sorry what --

15 MR. NEVIUS: NOCO, National Organization of Accrediting
16 Organizations, where we actually certify -- Certifying Organizations. We
17 have to have an independent governance body.

18 They are going to propose a continuing education hours program
19 where they are actually raising the bar. Some of those hours will actually
20 have to be earned on either simulators or in simulation exercises.

21 So there they are marking the requirements to maintain the operator,
22 the individual operator certification more stringent.

23 We are also going to be developing training standards. We are in the
24 process of conducting a training study. FERC is doing -- has done a survey,

1 and we are cooperating with FERC on this.

2 But out of all of this will come a training program and training
3 standards.

4 COMMISSIONER JACZKO: And I guess bringing it back to
5 specifically the issue that you probably address best, Mr. Leidich, for us this
6 is about nuclear safety, do you intend to have kind of modules dealing
7 specifically with that aspect of training and dealing with nuclear power
8 plants?

9 MR. NEVIUS: Yes. There will be different modules for the different
10 types of functions that are performed. So, if are you reliability coordinator
11 looking at a wide area of the grid, there will be one module. And that will
12 actually be one of the higher, modules with the highest requirements.

13 Then the individual transmission operator, part of that will deal with the
14 interface with all generators and especially nuclear generators.

15 I think Mr. Leidich spoke when he did the keynote at the NEI, NERC
16 INPO, EPRI workshop, talked about how FirstEnergy had redone its training
17 program for system operators along the lines of the nuclear training with
18 using simulators. Not everybody has or uses a simulator for operator
19 training.

20 And I think those in the training environment would say that is
21 probably the best way to train operators and to give them experience with
22 different kinds of emergency conditions.

23 COMMISSIONER JACZKO: Did you want to add something?

24 MR. MC CLELLAND: Sure, I do.

1 Our chairman summarized the issues associated with the blackout as
2 really three T's: Tools, training and trees. If you move back to the blackout
3 report, and I'm sure you all have copies of this, if you bear with me for just a
4 couple of minutes, because I think the question is very appropriate.

5 Pages 156 and 157. This is recommendation number 19. There are
6 three parts. "NERC should require training for the planning" -- this is part A.
7 NERC should require training for the planning staff at control areas and
8 reliability coordinators concerning power system characteristics and load,
9 VAR and voltage limits to enable them to develop rules for operating staff to
10 follow."

11 That would include, at least in my opinion, any voltage requirements
12 for nuclear facilities. That needs to be done.

13 B: "NERC should require control areas and reliability coordinators to
14 train grid operators, IT support personnel and their supervisors to recognize
15 and respond to abnormal automation system activity."

16 And C: "NERC should commission an advisory report by an
17 independent panel to address a wide range of issues concerning reliability
18 training programs and certification requirements."

19 Let's jump to the last paragraph.

20 "This panel's report should be delivered by March 31st, 2005. FERC
21 and Canadian authority, in consultation with NERC and others, should
22 evaluate the report and consider its findings in setting minimum training and
23 certification requirements for control areas and reliability coordinators."

24 Now, what has happened is this has become a more protracted

1 process. But it is very important as regulators of the industry, it is very
2 important that we stay on top of what this blackout recommendations are.
3 There are 46 of them.

4 How many of them are finished. How many of them have been
5 finished on time. How many have fallen behind. What are the reasons that
6 they have fallen behind. What should the coordination between agencies be.

7 I just can't emphasize enough -- having been in the industry for
8 20-plus years, and being new to government, I can't emphasize enough how
9 important it is for the NRC's safety interface with FERC, for us to interface
10 back with DHS and to interface over to NERC. So that these
11 recommendations are done with the full cooperation and consideration of
12 what is important to each of the parties.

13 Because there is really no one out there -- other than what NERC has
14 already relayed to their members, there is no one watching for the NRC
15 requirements as far what those voltage limits should be for the plants. This
16 needs to be conducted with the NRC through FERC or with FERC back to
17 the industry.

18 MR. JACZKO: Thank you.

19 COMMISSIONER MC GAFFIGAN: I'm going to start by agreeing with
20 what Mr. McClelland just said entirely. I mean, I think that we have to be
21 involved. We are a party to all this. Even if the Congressional legislation
22 passes, that the need for communication is not going to be in any way
23 reduced. It is just you will have a better tool in your tool kit, tools that we
24 have in our tool kit.

1 On the training issue, I know that from our experience, we have a
2 relationship with INPO on training. We establish training requirements for the
3 operators of power plants. And we draw up examinations both simulator
4 exams, so that simulators are mandatory, obviously, in our world and written
5 exams.

6 And the training programs of the licensees are through INPO certified
7 and evaluated and you can get publicly -- this is one of the areas where
8 INPO, I believe, is public with what utilities if they fall off the wagon in terms
9 of their training programs. At least, I've seen enough in public.

10 That model is one that I know there is interest among the
11 Commissioners at FERC and we may go over the top in terms of our
12 requirements, but I don't know what the current thinking -- you don't have the
13 authority so -- but where is the current thinking about requiring simulators,
14 requiring exams?

15 I mean, you have given us an answer. But these exams, are there
16 ongoing exams? You mentioned an initial exam, Mr. Nevius. Are there
17 ongoing exams for the operators?

18 MR. NEVIUS: Yes. The initial exam -- we started this program about
19 five years ago. And the certifications were good for five years. So some of
20 them are coming due.

21 That's why -- and the only way to re-certify now or to maintain
22 certification is to retake the exam.

23 Now, we have improved the exam over the years as well.

24 But this new program, the continuing education hours program, is

1 intended to raise the bar farther than we can with just a simple exam. To
2 require education, which will, in turn, require the organization that the
3 operators work for to provide the time and the resources for these operators
4 to take these courses and to have the simulator training or simulation
5 training.

6 So it's going to raise the bar for that requirement.

7 COMMISSIONER MC GAFFIGAN: The people have simulators. Are
8 these simulators -- like nuclear power plants is faithful to the plant
9 configuration as we can make them. Are these simulators faithful to the PJM
10 configuration?

11 MR. KOZA: Ours are.

12 COMMISSIONER MC GAFFIGAN: So you are right where we are?

13 MR. KOZA: In fact, we do -- part of the program I alluded to is
14 simulator tests and training. So they have to pass, successfully pass the
15 simulator test.

16 COMMISSIONER MC GAFFIGAN: Okay. It strikes me that is a good
17 practice without being an expert on grids. And it may not be needed in every
18 pocket of America, especially whether it is a -- back in the old model, a single
19 utility talking to itself.

20 But for most of America, we need something like what PJM is doing, in
21 my estimation.

22 MR. NEVIUS: We have a standard now that requires reliability
23 coordinators and transmission operators and balancing authorities to have
24 NERC certified operators on shift.

1 We will cite utilities that do not have NERC certified operators working
2 in the critical areas.

3 So this is an existing standard. And as the requirement for
4 certification, the bar for that requirement is raised, this will raise the level of
5 training for these operators. And then the requirement for certified operators
6 to be on shift will remain in place.

7 COMMISSIONER MC GAFFIGAN: Can I ask a naive question again
8 about transmission?

9 I will start with Mr. Garvin. Do we have enough transmission in this
10 country or is NIMBY preventing us from having adequate transmission?

11 And I turn to you as a state because I get the impression at times,
12 reading the newspaper, that one of the great constraints on this system is the
13 amount of transmission capability. And I think Mr. Leidich mentioned that it
14 has not exactly been rewarded in the past to invest in transmission -- or
15 perhaps it was Mr. McClelland.

16 How do the states see getting enough transmission?

17 MR. GARVIN: I can tell you it is a good question to ask me, because
18 we are one of the most congested transmission interfaces in the continental
19 United States. DOE routinely tags Wisconsin as having one of the worst
20 transmission systems.

21 I can tell you since I joined the Commission in 2001, we are one of the
22 few states that are aggressively building transmission. We have approved
23 over a half billion dollars of construction applications since I have been on
24 the Commission, and we have a stand alone company to do that.

1 One of the things states like Wisconsin did is we didn't go all the way
2 to retail choice, but what we did do is unbundle the transmission component
3 from generation. And speaking just as a Wisconsin regulator, that has been
4 a good model from our perspective in terms of getting transmission fixes
5 made in a congested area.

6 Obviously, there are tremendous siting challenges. We have a \$400
7 million project that is being held by up one of our 72 counties because part of
8 the line goes along county lands.

9 That line will be in service. It is just a matter of whether we as an
10 entity cite a different route. But that line will get built. We have said that
11 many times.

12 But that is a significant challenge.

13 I would view any transmission project, just as a state regulator, not
14 being familiar with other jurisdictions, there are always going to be
15 challenges to major 345 and up projects. And it affects a number of people,
16 private land owners. And we are very sensitive to those concerns.

17 Obviously, that, in large part, is what is driving the federal back stop
18 authority. So there is a hammer so that there is a regulatory process that --
19 we don't want it to be easy. But it must have an end in terms of tackling
20 these issues.

21 But transmission under investment is a major challenge as a country.
22 And I can just tell you in the upper Midwest we are doing our part to build
23 more transmission. But there are other pockets in this country that also
24 suffer from that. And I don't know if that's a Federal land issue or -- but this

1 country suffers from a significant under investment in transmission --

2 COMMISSIONER MC GAFFIGAN: It strikes me that, I can say this as
3 a nuclear regulator -- and, Mr. McClelland, it looks like you might want to say
4 something.

5 MR. MC CLELLAND: Probably shouldn't.

6 COMMISSIONER MC GAFFIGAN: Okay. Refinery capacity -- you
7 know, NIMBYism is pandemic. And people -- gas pipelines, I guess, are a
8 problem, too. Electrical transmission is a problem. Refineries are a problem.
9 Power plants are a problem.

10 You know, you wonder how people think they turn on their lights or
11 turn on their stove if it is gas-powered.

12 But I will give you the choice. You don't have to --

13 MR. MC CLELLAND: No, I will. I will. It is definitely a problem. For
14 the past several decades, transmission investment has declined. And it has
15 continued to stay low.

16 Transmission capacity across the United States, although there are
17 new technologies and certainly, the industry has gotten much more efficient
18 at managing transmission itself, it can really be thought of as wringing in the
19 last few megawatts out of the transmission system. It is just a better
20 managed system where a fundamental change capacity is necessary.

21 The Commission, the Federal Energy Regulatory Commission, the
22 Commissioners and the Chairman have gone on record to say we need to
23 have additional transmission projects built.

24 Many of the issues can be boiled down to really a couple of issues or

1 a couple of points.

2 It is not dissimilar. In fact, comparisons have been made to the days
3 prior to the Federal Highway Act when there was congestion, there were
4 small roadways interconnecting with larger roadways. There were
5 jurisdictional issues from state to state.

6 And President Eisenhower found that he couldn't efficiently move
7 troops and equipment from one coast to the next. It became a matter of
8 national defense in order to redo or redesign the highway system across the
9 United States. The transmission parallel is similar.

10 There are jurisdictional issues between states, between state and
11 Federal government that does not make it easy for industry to do their job.

12 That can really be boiled down to cost recovery. And there are siting
13 issues. There is definitely a NIMBY factor and there are, again, jurisdictional
14 disputes between states and between the Federal government, in some
15 cases with county, and in some cases between Federal agencies.

16 You know the line that Mr. Garvin spoke of. The last that I heard is
17 that FERC is on one side abdicating the line be built. There is another
18 Federal agency on the other side, trying to stop the line from being built.

19 So, it's not all industry's fault. Not at all. But deregulation has also
20 helped complicate the picture because the institutions were broken apart,
21 there are segments of the industry that profit by congestion on a transmission
22 system, just as there were segments of the roadways, states and
23 jurisdictional entities that profited by congestion with turnpike tolls and
24 restaurants establishments, et cetera.

1 So it is a complex issue. But it is not --

2 COMMISSIONER MC GAFFIGAN: Last question. Is there anything in
3 the energy legislation passed by the House that deals with this issue?

4 MR. MC CLELLAND: Yes, there is.

5 And one of the major obstacles --

6 COMMISSIONER MC GAFFIGAN: The backstop provision that Mr.
7 Garvin mentioned --

8 MR. MC CLELLAND: Right. It is a Federal backstop provision.

9 COMMISSIONER MC GAFFIGAN: 345 kilovolt lines and above or is
10 it just for any line?

11 MR. MC CLELLAND: It's for transmission. So there is a Federal
12 backstop for siting authority that if the states refuse to take action, and I think
13 it is a period of one year, then the Federal government can be involved to
14 take action for siting.

15 However, the cost recovery issue will still be an issue. There will still
16 be problems with jurisdictions, which is why, again, it is so important that not
17 only the Federal agencies work together but as much as possible, the state
18 and Federal agencies work together, too.

19 The module that Mr. Garvin spoke of, actually, one of the ways that it
20 is successful is that it avoids some of the retail jurisdictional issues that you
21 may have between states. It moves to more of a wholesale rate recovery
22 process, which puts it under a centralized control from FERC.

23 MR. GARVIN: Commissioner, I would add one thing. That is that last
24 point. It is not just siting but finding the cost causer. When you start talking

1 about regional transmission --

2 COMMISSIONER MC GAFFIGAN: Mr. Leidich, I think, had
3 mentioned -- somebody had mentioned that the transmission recovery is not
4 exactly -- it's been messed up because -- building plants is okay. We have
5 got natural gas plants popping up everywhere. But building transmission,
6 you don't get the same rate of return on, and that is a problem -- but I'm glad
7 to hear Wisconsin is --

8 MR. GARVIN: I'm just saying that down the road, that will be the next
9 big fight if you have a regional transmission expansion plan, who is going to
10 pay for that line from the Dakotas down into the higher load areas of Chicago
11 and that area, because that's where you are going to see the real fireworks
12 when Wisconsin ratepayers are being asked to provide -- you know, we
13 would argue a disproportionate share for PJM market or whatever.

14 Siting is one thing. But actually who is going the pay --

15 MR. MC CLELLAND: But again, it's not a model, and I think you
16 would agree, it is not a model without precedent.

17 There are utilities that have sold and wheeled retail or wholesale
18 power across their systems for years and to the benefit of the retail
19 customers. There are actually utilities that I know specifically that made a lot
20 on wholesale transactions, but that lot was regulated and then went back to
21 subsidize, if you will, the rates of the retail customer.

22 So it is not insurmountable. It really is not. But it is an issue that
23 needs to be addressed. It needs to be addressed between the regulators,
24 because industry is caught on the short end of the stick.

1 COMMISSIONER MC GAFFIGAN: My final comment is going to be --
2 and Commissioner Merrifield has a question, and Commissioner Jaczko has
3 one question -- it actually feels good to be on this side of the table for a
4 change. I thought my job was hard.

5 COMMISSIONER MERRIFIELD: We have our own difficulties, but I
6 have to say I would agree with you, I am glad that this has gone beyond our
7 regulatory reach.

8 I want to get back to and follow-up on a question that Commissioner
9 McGaffigan asked. And this really goes to Mr. Nevius and Mr. Koza.

10 Mr. Koza, in your slides, I think it is your slide six, are you talking
11 cultural differences in the difficulty in communications.

12 And some of that is a difficulty in communications between the
13 transmission system operators and the folks who are operating nuclear
14 power plants and the lexicon of language that we use is somewhat different.

15 I'm wondering how is NERC dealing with some of those issues in
16 terms of the training, because those operators have to, in terms of
17 understanding some of those needs and understanding what those
18 requirements are, there needs to be an interface between the operators at
19 the nuclear power plants and the operators of the transmission organizations.

20 How are you effectuating that level of discussion such that those
21 communications gaps that were raised can be eliminated?

22 MR. KOZA: Well, I'm sick of talking about my nuclear
23 communications protocol, but that is clearly one of the steps we took, and
24 just getting operators to talk to one another. As crazy as that sounds, helps

1 a lot.

2 And these sessions where we have operators to operators talking to
3 each other is very beneficial.

4 COMMISSIONER MERRIFIELD: Yes, I hear you, but I am just
5 wondering about the enforceability of that. How is that being built into the
6 process for the training of the operators and their certification?

7 MR. NEVIUS: From our perspective, that would be built in through
8 this new standard which says the transmission operator, the organization will
9 be held accountable for knowing what the requirements of the nuclear plant
10 are. And operating the system to meet those requirements.

11 And there will be training programs and training standards that will
12 require the operators to understand that. But then from a performance
13 standpoint, their performance in doing this will be monitored.

14 In other words, when we develop the standard, there are actually
15 compliance requirements and measurements developed so we will have
16 some way to measure whether or not the transmission operator is adhering
17 to these requirements.

18 Is he observing? Does he know what the requirements of the nuclear
19 plant are? Does he have regular meetings with the plant operators? Does
20 he operate his system at all times on a pre and post contingency basis to
21 respect those limits?

22 So all of those will be written into this standard and we will hold the
23 transmission operator accountable for this.

24 MR. KOZA: The other thing I want to add to that, I guess we focused

1 on the operator-to- operator interaction. There is a lot of this that goes on, in
2 essence, in the back office where the respective engineering staffs exchange
3 information, makes sure analysis is done correctly such that in realtime that
4 stuff is immediately available.

5 That's just as important as the operator-to-operator communication.

6 COMMISSIONER MC GAFFIGAN: Commissioner Jaczko has one
7 last question.

8 COMMISSIONER JACZKO: Just one, almost a follow-up to the
9 question I had asked you, Mr. McClelland. You talked about, I guess is was
10 Recommendation Number 19 dealing with the training, and you said there
11 was a March 31st deadline to get this report done.

12 Where actually does that stand right now?

13 MR. MC CLELLAND: I'm glad you asked the question. In no way was
14 I attempting to point a finger, say, specifically at NERC on the
15 recommendation.

16 The survey itself, FERC has stepped in and done part of this work.
17 And we are part of the reason for delay. But the survey was sent to industry.
18 We are compiling the results. We have offered to share the raw data where
19 entities have not objected. If a specific company objected to our sharing the
20 raw data with NERC, then we will not do that. Otherwise, we will share that
21 information.

22 They are going to use our specific surveys as a follow-up or as a
23 supplemental piece to their own research which they are conducting in
24 parallel.

1 The last I have heard, and, Dave, you can probably comment on this,
2 was that they expect to have their training program completed more or less
3 by the end of this year. The March 31st, 2005 deadline did slip, though. And
4 it is important that we highlight that.

5 And again, not to point the finger at NERC, we can point the finger
6 back at FERC also. But it is important to highlight where are we on this
7 checklist, where are we because summer is coming. And if we have a hot
8 summer with peaks, we could be vulnerable on some of these
9 recommendations.

10 COMMISSIONER MC GAFFIGAN: Thank you very much. We are
11 going to call our second panel. And we look forward to continuing to work
12 with all of your institutions because that, obviously, is one of the conclusions
13 of the first panel, that we all are in this together.

14 Thank you.

15 (Change in panel)

16 COMMISSIONER MC GAFFIGAN: We are going to start with the
17 second panel.

18 We look forward to the staff's comments and where they stand at the
19 current time.

20 This is Ellis Merschoff's final appearance before the Commission, at
21 least as a career Federal civil servant who has served this Nation for 37
22 years starting at the Naval Academy. And we, obviously, deeply appreciate
23 that service.

24 He has -- I don't know whether he strove to emulate Pat Norry and

1 Frank Miraglia in his direct communication with the Commission. But
2 whether he strove or not, he succeeded. And we look forward to talking
3 more about him at his going away session this afternoon.

4 And I commend the EDO for making him work until the absolute last
5 day that he is here at the Commission.

6 Commissioner Merrifield?

7 COMMISSIONER MERRIFIELD: I join Commissioner McGaffigan in
8 saying this is a little bit of a bittersweet moment.

9 Ellis has done tremendous things for this agency over the history of
10 his career. While we wish him well in his future endeavors, which I'm certain
11 will be many, it is with some regret that we are celebrating this particular day.

12 But nonetheless, certainly, what Ellis has accomplished in his time
13 here at the Commission is significant and is a real testament to his
14 commitment to excellence and leadership in the federal government.

15 COMMISSIONER JACZKO: I just want to say that I have had a much
16 shorter opportunity to work with Ellis, but I do appreciate that opportunity.
17 And certainly want to second the thoughts of my other Commissioners about
18 your service to this agency and to the Federal government and to the Nation
19 as whole. It is very commendable and appreciate that service very much.

20 COMMISSIONER MC GAFFIGAN: With that, Mr. Merschhoff, you
21 have the floor.

22 MR. MERSCHOFF: Thank you very much for those kind words. And
23 I would also like to thank the Commission for inviting the staff to speak at
24 today's meeting regarding grid reliability.

1 As you are aware, the NRC considers grid reliability a very important
2 issue.

3 The NRC participated in the U.S.-Canada power system outage task
4 force that investigated the causes and made recommendations as a result of
5 the August 14th, 2003, blackout event.

6 The final report stated that the NRC will consider the implications of
7 the August 14th Northeast blackout under the NRC's regulations.

8 With me at table today to my left is Brian Sheron, the Associate
9 Director for Project, Licensing and Technical Analysis; and to his left, Jose
10 Calvo, the Chief of the Electrical and Instrumentation and Controls Branch.

11 To my right is Carl Paperiello, the Director of the Office of Research.
12 And to Carl's right is Mike Cheek, the Assistant Branch Chief of the
13 Operating Experience and Risk Analysis Branch.

14 Today we are here to give you the status of our efforts since the last
15 Commission meeting on this subject, which was held on December 9, 2004.
16 Brian Sheron will give you an overview of the staff work.

17 We, too, have provided a list of acronyms in the next several pages of
18 the handout.

19 Brian.

20 COMMISSIONER MC GAFFIGAN: I do think that this session
21 between all the different bodies may set the record for acronyms.

22 DR. SHERON: Thank you. I'm Brian Sheron, Associate Director for
23 Project Licensing and Technical Analysis in the Office of Nuclear Reactor
24 Regulation.

1 As you are well aware, this is the third time the staff has presented
2 information regarding grid reliability at a Commission meeting. The first time
3 was May 10, 2004. And at that meeting, there was a similar format as
4 today's meeting.

5 The second time was December 9, 2004, when we discussed grid
6 reliability as part of the reactor safety and licensing activities brief. Staff
7 Requirements Memorandum from the December 9, 2004, meeting directed
8 the staff to have today's Commission meeting.

9 The NRC participated in the U.S.-Canada power system outage task
10 force that investigated the causes of and made recommendations on the
11 August 14, 2003, blackout event. The final report stated that the NRC will
12 consider the implications of the August 14, 2003, Northeast blackout under
13 the NRC's regulations.

14 As you know, PRAs have shown that station blackout can be a
15 significant contributor to a risk.

16 Staff is concerned that most nuclear power plants are now dependent
17 on other entities such as transmission system operators to ensure the
18 availability of the off-site power system, which is the preferred power supply
19 and is essential to ensure the safe operation of nuclear power plants.

20 In the past, the electric power industry was dominated by vertically
21 integrated utilities that produced and transmitted electricity for their local
22 customer demand. In essence, nuclear power plants then were in a better
23 position to ensure the availability of offsite power than they are today.

24 Today you will hear from Mike Cheek of the Office of Nuclear

1 Regulatory Research, who will present the results of the station blackout risk
2 analysis as the Commission had requested during the May 2004 briefing.

3 Then, you will hear from Jose Calvo of the Office of Nuclear Reactor
4 Regulation, who will present the regulatory actions that the staff has taken.

5 Then I will present the conclusions.

6 Now I'm going to turn it over to Mike.

7 MR. CHEOK: Thank you. I'm Mike Cheok, the Assistant Branch
8 Chief of the Operating Experience Risk Analysis Branch, in the Office of
9 Nuclear Regulatory Research.

10 I will discuss the tasks performed by the Office of Research to support
11 the grid reliability actions triggered by the August 2003 grid event. As part of
12 the agency's task action plan, we completed re-evaluation of the station
13 blackout risk using updated loss of offsite power frequencies and durations.

14 We have issued two draft reports for internal and external stake
15 review. We have received stakeholder comments on both reports. And we
16 are currently evaluating these comments. My discussion today is based on
17 results from the draft reports.

18 Station blackout risk measured in core damage frequency is highly
19 dependent on four factors. They are loss of offsite power, a LOOP
20 frequency, a LOOP duration, emergency diesel generator, EDG reliability
21 and plant specific coping features such as battery depletion time, turbine
22 driven pump performance, alternate onsite AC power sources, and reactant
23 coolant pump seal design.

24 These four elements are included in our standardized plant analysis

1 risk or SPAR models in order to obtain station blackout core damage
2 frequency.

3 In our next few slides, we will discuss the trends in LOOP frequency
4 and duration and show how they factor into the results of the SBO study. We
5 will also touch upon the importance of EDG reliability and plant specific SBO
6 coping features.

7 Next slide, please.

8 This slide shows the annual loss of offsite power frequency from 1986
9 through 2004. There is a decreasing trend from 1986 to 1996.

10 The trend is essentially flat for 1997 to 2002. The decrease in the
11 number of LOOP events is due to the decrease in plant centered and switch
12 yard centered events beginning in the mid-1990's. Only one plant-centered
13 LOOP event has occurred during the period 1997 to 2004.

14 Note that the number of LOOP events in 2003 and 2004 is much
15 higher than in previous years. For 2003, there were 12 LOOP events; and
16 for 2004, there were five LOOP events.

17 Next slide, please.

18 When we partitioned our data, we see that of the 19 loss of offsite
19 power events that occurred between 1997 and 2003, 17 occurred during the
20 summer period. In this study, we defined the summer period to be between
21 and including the months of May and September.

22 The agency's industry trends program identified 38 plants scrams
23 occurring in 2003 and 2004 that are caused by grid-related problems and
24 problems with connections to the grid. Thirteen of these resulted in plant

1 trips with the loss of offsite power and were classified as grid-related LOOP
2 events in our study. All 13 of these events occurred during the summer
3 period.

4 There were no grid-related LOOP events between 1997 and 2002.

5 As mentioned previously, our data shows a decrease in the number of
6 plant centered and switch yard centered events. Grid-related LOOP events
7 are beginning to dominate.

8 COMMISSIONER MERRIFIELD: Just for the sake of clarification.
9 From our nomenclature, you noted that there were 13 LOOP events in 2003
10 and 2004.

11 Would it be safe to suggest that either 9 or 10 of those were
12 associated with the August 2003 blackout?

13 MR. CHEOK: Eight of those were associated with the August 2003
14 blackout.

15 COMMISSIONER MERRIFIELD: Okay. Thank you.

16 MR. CHEOK: These findings are consistent with those documented in
17 NUREG 1784, titled "Operating Experience Assessment, Effects of Grid
18 Events on Nuclear Power Plant Performance," which was published in
19 December 2003.

20 Next slide, please.

21 This slide shows the trend in annual average duration of LOOP
22 events. The trend is increasing for the period 1987 through 1996. The trend
23 for LOOP duration for 1997 through 2003 is essentially flat.

24 Average durations have been increasing in part because of the

1 number of shorter duration events have been decreasing, while the number
2 of longer duration events have remained about constant.

3 Next slide, please.

4 This slide shows the results of the station blackout evaluation together
5 with results from two sensitivity evaluations. Industry mean, medium, 5th
6 and 95th percentiles are shown. The range shows plant to plant variation in
7 core damage frequency. For the baseline case, the industry average annual
8 mean SBO risk is in the mid 10 to the minus 6 range for the period 1997 to
9 2003.

10 The SBO risk, taken into account only the 2003 and 2004 data, will be
11 approximately three times higher. The baseline results reflect improving
12 EDG performance, improving plant specific SBO coping capabilities, for
13 example, turbine driven pump performance, increasing duration of LOOP
14 events, and the lower overall loss of offsite power frequency observed during
15 the 1997 to 2003 period.

16 To maintain this low SBO risk, we need to keep the LOOP frequency
17 and duration low, maintain EDG performance, and maintain SBO coping
18 capabilities.

19 The two sensitivity studies in the slide show the effects of degraded
20 EDG performance and the effect of the increased LOOP frequency during
21 the summer period. From these studies we note that, one, the SBO risk
22 approximately triples the EDG failure rates and unavailabilities are doubled;
23 and two, the annualized risk during the summer period is about twice the risk
24 average over the entire year.

1 Next slide, please.

2 The results of station blackout re-evaluation show that using data from
3 1997 to 2003, station blackout risk was low when evaluated on an annual
4 average basis. However, when we focus on grid-related LOOP events, the
5 SBO risk has increased. Our current results show that the grid contributes
6 50% to the SBO core damage frequency. Severe and extreme weather
7 events, which are related to grid events, contribute another 37%.

8 The relatively large contributions are due in part to longer durations for
9 these events. Therefore, the increasing number of grid-related LOOP events
10 in 2003 and 2004 and their concentration during the summer period, are
11 causes for concern.

12 Additionally, if you consider only data from the summer months, the
13 SBO risk increases by approximately a factor of two.

14 I would like turn it over to Jose Calvo of the Office of Nuclear Reactor
15 Regulation to discuss staff actions in this area.

16 MR. CALVO: First slide, please.

17 Thank you. I'm Jose Calvo, the Branch Chief of the Electrical and
18 Instrumentation and Control Branch of the Office of Nuclear Reactor
19 Regulation.

20 I would like to provide you with the status of the staff regulatory
21 actions. To maintain low station blackout risks as indicated by the Office of
22 Research, it is necessary to keep the loss of offsite power frequency and
23 duration low, maintain emergency diesel generator performance and
24 maintain station blackout coping capabilities.

1 Therefore, long duration, loss offsite power events, and risk increases
2 due to on-line equipment outage are safety significant.

3 It should be noted from the grid-related actual data that offsite power
4 availability is potentially more challenged in the summer, and the grid is the
5 largest contributor to station blackout core damage frequency.

6 The staff determined that a generic letter was warranted based on the
7 information from the Research reports, the inspection and interviews of
8 licensees and the agency industry data. The staff issued a draft generic
9 letter for public comment in the Federal Register on April 12, 2005.

10 The staff has targeted the issue of the final generic letter no later than
11 the end of the year. However, this may be impacted by the number of public
12 comments and the loss of senior experienced personnel.

13 The purpose of the generic letter is to obtain information from the
14 licensees in order to confirm that the nuclear power plants are in compliance
15 with NRC regulations. The generic letter requests information from the
16 licensees in four areas:

17 One, use of the transmission system operator protocols to monitor grid
18 conditions to determine operability of the offsite power systems; second, use
19 of transmission system operator protocols to monitor grid conditions for
20 consideration in maintenance risk assessments; third, offsite power
21 restoration procedures; and fourth, loss of offsite power caused by grid
22 failures at a frequency of greater or equal to 20 years.

23 In addition, the generic letter will raise awareness of grid reliability
24 issue before the summer of 2005.

1 Next slide, please.

2 The Staff Requirements Memorandum from the May 10, 2004,
3 Commission meeting stated that the NRC staff in the Office of General
4 Counsel should work with the Federal Energy Regulatory Commission,
5 FERC, and the North American Electric Reliability Council, NERC, to develop
6 Memorandum of Understanding to facilitate interactions with these
7 organizations on matters pertaining to grid reliability. The staff has
8 completed this assignment.

9 The NRC has now a Memorandum of Agreement with NERC as well
10 as a Memo of Agreement with FERC.

11 These Memoranda of Agreement allow the NRC to control with NERC
12 and FERC with regard to the availability of technical information that will be
13 useful in the areas of mutual interest and to promote and encourage free flow
14 of such information pertaining to electrical grid reliability, security and
15 integrity.

16 Furthermore, the staff also informed the Department of the Homeland
17 Security of these grid-related efforts.

18 The staff has communicated with various stakeholders including
19 Federal agencies, NERC, transmission system operators, industry institutes
20 and industry representatives. The NRC is currently working with NERC and
21 FERC in assessing grid operating data for change in emergency emerging
22 trends. This assessment should lead to the development of indexes to
23 gauge the impact on grid reliability that could be used to assist the
24 vulnerability of a nuclear power plant to a potential loss of offsite power

1 events.

2 Next slide, please.

3 The continuing attention of the grid will be needed during summer
4 2005 and beyond. The staff will continue to give its attention to the grid. In
5 particular, the staff will continue to focus on remaining cognizant of grid
6 operations and condition for offsite power operability and maintenance risk.

7 The staff should also focus on realtime contingency analysis programs
8 to identify potential post-trip voltage problems, communication protocol
9 between the nuclear power plant and transmission operator and the
10 restoration procedures in coping duration for a station blackout.

11 The staff is preparing a temporary instruction to assess licensing
12 conformance with NRC regulations and the readiness of the nuclear power
13 plants to cope with potential challenge by power outage events during the
14 summer of 2005.

15 The temporary instruction is currently in concurrence, and the staff
16 has targeted the issues of the temporary instruction no a later than June 1,
17 2005.

18 The TI will focus on operating procedures, such as identify the nuclear
19 power plant operator actions to take when notified by the transmission
20 operator that the post-trip voltage of offsite power is not adequate to supply
21 safely related –

22 Also, will identify compensatory actions that the nuclear plants
23 operator takes when the transmission operator is not able to predict the post-
24 trip voltage at the nuclear power plant, also will focus and direct the nuclear

1 plant operator to perform grid reliability evaluations as part of the required
2 maintenance risk assessment before taking equipment out of service. And
3 finally, direct nuclear power plant operators to address the -- conditions that
4 emerge due to maintenance activity.

5 Let me turn it over to Brian Sheron who will present the conclusions.

6 DR. SHERON: In summary, based on information from the Office of
7 Research reports, the inspections and interviews of licensees that were
8 conducted last summer, and industry trends, the staff saw a need to confirm
9 that licensees had in place programs that assured that they continued to
10 meet applicable regulatory requirements.

11 Staff concluded that a generic letter was the appropriate regulatory
12 vehicle to use to gain that assurance. Staff issued the draft generic letter for
13 public comment on April 12, 2005. And the public comment period ends on
14 June 13, 2005.

15 Staff was targeting the issuance of the final generic letter no later than
16 the end of the year.

17 The staff will also issue a temporary instruction to the regions to
18 inspect licensees' conformance with the NRC regulations and readiness of
19 nuclear power plants to cope with potential grid conditions during the
20 summer of 2005.

21 The staff believes that these actions, coupled with FERC, NERC,
22 INPO and industry actions has raised the licensees' awareness of the
23 importance of grid reliability.

24 This concludes the staff's presentation.

1 COMMISSIONER MC GAFFIGAN: Thank you.

2 Commissioner Merrifield, you have the first question.

3 COMMISSIONER MERRIFIELD: Thank you very much. Jose
4 mentioned at the end of his presentation that we are targeted to issue
5 temporary instruction on June 1st.

6 Are we at a point in our concurrence chain where we are going to get
7 that date?

8 MR. CALVO: We are currently now receiving the comments from
9 the -- internally we sat down -- it's prepared. We went to the regions to get
10 their comments. They are currently being incorporated. And after they are
11 incorporated, then we move.

12 So I think we are going to meet that date. I think we are going to
13 make it be a better date.

14 COMMISSIONER MERRIFIELD: I been searching here trying to find
15 it. The problem is you guys give us so much information. And when I really
16 want to tap into it, I have a hard time finding it.

17 I have been under the impression that the concern in terms -- here it
18 is. I'm quoting a memorandum that came up to the Commission. We define
19 summer as the period between the months of May and September.

20 MR. CALVO: That's correct.

21 COMMISSIONER MERRIFIELD: But we are not getting out the TI
22 until June 1st.

23 MR. CALVO: Somewhere between now and June 1st.

24 COMMISSIONER MERRIFIELD: Now, I know we were ahead of our

1 schedule last year. Looking back at the timetable, the Commission is about
2 a week ahead of where we were last year.

3 Is there a way, assuming -- and this is -- perhaps, I should not assume
4 it -- but assuming we were to do a TI next year, that we would be able to get
5 it into our system and through our pipeline so that it can actually get to our
6 licensees for them to take action for the summertime period of which we
7 define summer as beginning in May?

8 MR. MERSCHOFF: Luis would answer that question yes and so will I.

9 COMMISSIONER MC GAFFIGAN: The TI is an instruction for our
10 inspectors. And the draft generic letter was probably the most important
11 thing to get out.

12 DR. SHERON: Exactly. I was going to say what the industry, I think,
13 is going to pay attention to is the draft generic letter and what we are saying
14 in that.

15 If you have read the draft generic letter, you will see that we have
16 raised the issue that there are certain regulations that we think a licensee
17 needs to have these protocols in place in order to really be able to
18 demonstrate that they are complying with the regulation.

19 If they don't have the protocols in place, then the onus is on them to
20 explain why they still think they can demonstrate they meet the letter of the
21 regulations. For example, low probability of loss of offsite power.

22 And, for example, take maintenance, taking things out of service.

23 MR. CALVO: And as you notice, we issued before May 1st, the
24 generic letter.

1 MR. MERRIFIELD: Well, I appreciate -- I misspoke. Nonetheless, the
2 point still being that the TI and our instruction to our inspectors is our action
3 plan to make sure that the utilities are doing what we expect them to do. So
4 it give some signal as to what our folks will be looking at.

5 COMMISSIONER MC GAFFIGAN: It helps the utilities understand
6 how we interpret.

7 May I also ask, TI that stands for temporary instruction?

8 MR. SHERON. Yes.

9 COMMISSIONER MC GAFFIGAN: So I think what you are looking for
10 is a PI to make up a more permanent instruction that's incorporated as a
11 result of the generic letter into our permanent inspection program.

12 MR. MERRIFIELD: That may or may not be. I mean, obviously, the
13 circumstances that we face each year with the grid can change. So, it may
14 well be that we would have -- and I'm not suggesting that that is the case, but
15 it may well be that we have a series of TI's over a period of years, each of
16 which is appropriate to the year in which we are focused on.

17 Now, that has not been issued yet.

18 Last year we issued it, and our inspectors undertook those
19 inspections, we did an analysis of that. The Commission was given results of
20 that analysis.

21 Is it in the plan of the staff to conduct that same type of follow-up
22 analysis this year or not?

23 MR. CALVO: No. This particular TI is not only focused on -- that we
24 feel that it is important to ensure that a nuclear power plant meet our

1 regulations and also assures the readiness for the summer of 2005.

2 The other one was more encompassing, we were looking for
3 information to see what we were going to do next. This was not very focused
4 it is focused on the operational readiness of the nuclear plant in accordance
5 with NRC regulations.

6 So we are going to be asking what will you do when the transmission
7 operator calls you that you are not -- what kind of actions do you take.

8 There has got to be a procedure somewhere that specifies the actions
9 to be taken. It is not really focused on safety.

10 MR. MERRIFIELD: But I guess the question still exists. We will be
11 issuing a temporary instruction. We will be asking your inspectors to carry
12 out inspections relative to that temporary instruction. And we will be getting
13 results from the our licensees, either they meet the requirements or they
14 don't.

15 At what point will the staff be getting back to the Commission to say,
16 okay, we have done what the temporary instruction calls for, here's what we
17 found even though it is narrower?

18 MR. CALVO: I believe we are expecting within a couple of weeks
19 after we issue the TI that we are going to have the responses from the
20 regions. We are going to ask all the regional inspectors to look at it.

21 We are going through a telephone conference, where we are going to
22 get all the regions together, then we are going to explain to them what needs
23 to be done.

24 So we are talking about two weeks, three weeks. That is what my

1 staff says. Yes

2 DR. SHERON: It is going to take us a little longer, I think, to digest it
3 internally before we get back to the Commission.

4 COMMISSIONER MERRIFIELD: I would imagine that would be the
5 case. I think I would expect a little more time.

6 DR. SHERON: But I do want to point out that if you remember the
7 generic letter that went out basically to all licensees, these are things we
8 think you need to have in place in order to demonstrate compliance with the
9 regulation.

10 But they don't say, if you don't have them, you are not in compliance.
11 What we do is we tell licensees if you don't have these, you need to provide
12 us information on what you do have and why you believe that that is
13 sufficient to meet the regulations.

14 We have to take that information and look at it and decide. If a
15 licensee, for example, does not have a protocol with their TSO, is what they
16 do have do we believe that is sufficient.

17 If it is not, we are going to have to make a decision whether there is
18 either a compliance question we have to follow-up on or maybe, perhaps, we
19 have to clarify our regulations or promulgate a new regulation in order to
20 make that very clear what our expectation is.

21 So, there's going to be some work that has to be done once we get
22 the comments in from the generic letter as well as from the TI, and decide
23 how we want to proceed.

24 So I would probably think that maybe more towards the end of the

1 summer, towards the fall we will be in a position to really tell you what we
2 found out.

3 COMMISSIONER MERRIFIELD: In the last panel, we had a
4 discussion toward the end in terms of training being undertaken by NERC
5 with the transmission system operators to let them understand the protocols
6 and the lexicons that are used by the nuclear power plants and breaking
7 down some of those communication barriers.

8 It struck me as I was listening to that that we are the ultimate licensing
9 authority for the operators of nuclear power plants that we oversee. We
10 issue the operators their license.

11 To what degree, if any, do we incorporate in our testing or evaluation
12 of operators the effectiveness with which they can communicate the needs of
13 the plant to the TSOs?

14 MR. CALVO: I'm sorry, I missed the question.

15 COMMISSIONER MERRIFIELD: Okay. Do we have any
16 requirements or any expectations of operators at nuclear power plants for
17 their ability to appropriately communicate the needs of the plant and the
18 status of the plant to the TSOs?

19 MR. CALVO: Both the TIs in 2004 and the TIs in --

20 MR. MERSCHOFF: Let me try that. I think I understand the question.
21 When we certify and license operators, part of the examination is the
22 simulator examination. Whether or not we have observed the
23 communications with outside organizations such as the TSO, I'm not sure.
24 But we can get back to you on that answer.

1 I suspect we do, at least at some level with outside communications.
2 I'm just not sure if it is grid-related.

3 COMMISSIONER MERRIFIELD: Before any licensees jump off the
4 cliff, I'm not suggesting that that necessarily needs to be part of the testing
5 program in order to get a license. But I would, at least, like to understand
6 whether the staff has considered that. That would be -- and certainly, I will
7 take that as a piece of homework.

8 MR. MERSCHOFF: One thing that does happen that was very
9 encouraging, I attended the meeting in February that NEI and INPO put on
10 the grid, and I agree with the statement that Dave made, that this is a water
11 shed event in terms of getting the right people in the room at the same time
12 to talk to each other.

13 It was at that meeting that I learned that some progressive utilities
14 invite the TSOs to their simulator when they do station blackout exercises so
15 that the TSO folks can see what's happening at the nuclear end and to help
16 with the communications and the vocabulary.

17 Now, that's not a requirement. That is just something they do and
18 certainly would be considered a good practice.

19 COMMISSIONER MERRIFIELD: Well, like you said, I don't know
20 what the right technical solution is to that. But at least, I would like to
21 understand a little bit better the degree to which the staff has considered that
22 and evaluated what ought to be done, if anything.

23 DR. SHERON: We will get back to you on that.

24 COMMISSIONER MC GAFFIGAN: Commissioner Jaczko?

1 COMMISSIONER JACZKO: I wanted to talk a little bit about the
2 presentation you gave, Mike, in talking about the frequency and occurrence
3 of loss of offsite power events.

4 In 2003, we obviously had eight events associated with what in some
5 sense could be considered one big event.

6 Do you see -- well, as much as you can tell the future, are we moving
7 in a direction where we, perhaps, will get to situations where we are going to
8 be having large numbers? If we don't get the reliability better understood or
9 under control, that we are going to be having large numbers of events where
10 multiple units will be off line, will be affected by the loss of offsite power? Or
11 historically, the trends, I think, have been more individual events. And is that
12 more where we will get back to this is kind of an anomaly?

13 MR. CHEOK: As you say, I guess we can not predict the future. But
14 what we saw in 2003 is one event that affected eight plants.

15 I think what we are trying to say today is that the staff is having
16 programs in place that would try to prevent occurrences like this that would
17 affect more than a few plants.

18 COMMISSIONER JACZKO: The 2000 events, those were --
19 individually those were about five events in 2004?

20 MR. CHEOK: Five in 2004.

21 COMMISSIONER JACZKO: Those were all separate and unique
22 events then?

23 MR. CHEOK: Actually, three of those events dealt with Palo Verde
24 and two extra events that were -- one was plant centered and one was --

1 related.

2 COMMISSIONER JACZKO: And the historical trend has been more
3 along that line than with the single event, the single plant rather than the --

4 MR. CHEOK: The historical events between 1997 and 2000 were
5 mostly in the plant centered switch yard and the severe -- events.

6 DR. PAPERIELLO: The problem is we used the term loss of offsite
7 power, which means the power does not get to the vital busses.

8 There is two types of events. The power is in the switch yard but you
9 can't get it to the to the vital bus because you had a transformer go or
10 something.

11 In the grid event, the power is not getting into the switch yard.

12 I think what you see, the data says to me there has been a qualitative
13 change in what is happening in the earlier period and what has happened in
14 the last couple of years. There are small numbers.

15 And so, the question is how predictive of that is future trends? It is
16 difficult to say unless you have an understanding. And I'm speaking as a
17 physicist understanding of the underlying causes of what is happening. And I
18 certainly don't know what the underlying causes are. I mean, other than
19 what I read in the popular and the trade press.

20 MR. MERRIFIELD: Just an observation. I think that is an excellent
21 question. I mean, it is not clear to me from the slides that have been
22 presented that there are variations between the two, i.e., those loss of offsite
23 power events that are centered in the switch yard versus those that are more
24 grid related.

1 That observation, that level of delineation is not necessarily
2 transparent here to me.

3 COMMISSIONER JACZKO: I am kind of switching gears back to the
4 issue of training. And this is something I have asked some questions about
5 with the previous panel on their efforts to ensure that transmission
6 operators -- and Commissioner Merrifield brought this up.

7 I do think it is important that this is something that is definitely
8 incorporated in our training protocols, that we are simulating these type of
9 events. And to the extent that we can, more than just -- and, again, this is
10 where it involves the cooperation of all the various entities that may be
11 involved that we incorporate the transmission side in some of those
12 simulations as much as we can.

13 I mean, in the emergency preparedness world we do multiparty
14 simulations involving various state and local entities that are responsible for
15 responding.

16 It seems to me that the biggest, most important aspect or one of the
17 biggest challenges with these incidents is that they do involve multiple
18 jurisdictions, multiple entities, some of which we have regulatory authority
19 over, some of which we don't.

20 To the extent those can be incorporated in a more programmatic way,
21 I think, certainly would improve our capabilities to respond to those incidents
22 when they do happen.

23 I don't know. Maybe, Ellis, if you want to talk about that.

24 MR. MERSCHOFF: The training scenarios that operators will go

1 through in the simulator often include loss of offsite power events and station
2 blackout events. When those occur, external communications are a part of it
3 but are often played, the receiver of the phone call, by an instructor.

4 Whether those instructors fully simulate the vocabulary and the extent
5 of coordination that needs to occur is something that I'm not sure of. But we
6 are going to look into it and get an answer to you on that.

7 COMMISSIONER MC GAFFIGAN: Thank you very much.

8 One question that has come up in the past, and I'm not an expert on
9 any of this, but I know FERC staff at one point raised with you all whether our
10 tech specs are too tight in the sense that we can contribute to a grid
11 instability event. And if we had a little more flexibility, which may detract from
12 safety at the nuclear power plants, that's the tradeoff here, we would prevent
13 grid instability issues.

14 Has that been looked at by the staff, the tradeoff between our tech
15 specs which require a plant to trip off fairly quickly if they are sensing
16 instability in the grid and the grid desire --

17 MR. CALVO: Look at it this way: Most of the tech specs that we have
18 today say that if you determine that this grid is degraded to the point that it
19 will not be capable of providing offsite power to emergency boxes, then you
20 enter the tech specs, and you have got 24 hours, 24 hours for that situation
21 to correct.

22 I cannot imagine a grid for 24 hours is in that condition. You go there,
23 the part that is of concern that if you are doing maintenance and you are
24 having a diesel generator out for service, that is the main concern. You want

1 to be sure to do what you can to put that thing back in service because now,
2 you getting vulnerable to a potential or worse than the other one, you get into
3 the station blackout position.

4 So it is mostly from the standpoint before you do maintenance, find
5 out how the grid is doing. While you are doing maintenance, find out if the
6 grid continues from what you thought when you started.

7 So the tech specs, yes, we talk about getting there. But it is a way to
8 say, now that the offsite power system is inoperable, so anything else that
9 you have to do now, you better watch it. Don't do work in the switch yard.
10 Don't do you any tests. Don't do any surveillance.

11 So that's what -- the fact that the grid becomes inoperable, becomes
12 degraded, that you enter the tech specs.

13 We are looking at that as part of the generic letter. And based on
14 responses that we have, some utility had statements there that is indicative
15 of the grid, others they have not. And hopefully, we get some kind of
16 consistency as we come out of the generic letter review.

17 COMMISSIONER MC GAFFIGAN: Did you have anything to add?

18 I'm going to flip now and ask a question from the other side. Of the
19 things that you listed, Mike, that we can control, that contribute to overall risk
20 is electrical diesel generator reliability.

21 Jose has just mentioned, you probably don't want to be doing a lot of
22 test surveillance and maintenance on the diesel generators at times where
23 the risk is greatest, which I assume is the summer.

24 Do people -- either one of you, do people, de facto, do that in the

1 industry today? During the summer months when the risks are double or
2 whatever numbers you used earlier, do they try to stay away from tests
3 surveillance and emergency diesel generator maintenance? Or do they
4 evaluate it under 50.65A4 and go ahead with it? What does a prudent
5 licensee do?

6 MR. MERSCHOFF: I might be best to answer that in my former role,
7 and then I will let you join in as regional administrator.

8 What I have seen is that a seasonal time frame is too long to try and
9 time that on. It's much more acute issues that will control timing. Are there
10 thunderstorms coming, for example. Are we in the midst of a heat wave
11 within the summer.

12 Those aspects are considered for when maintenance activities occur.
13 But a summer is just too long.

14 COMMISSIONER MC GAFFIGAN: Summer is too long a period. But
15 how long does emergency diesel generator maintenance take?

16 MR. MERSCHOFF: Seven days. On occasion, longer usually
17 shorter.

18 COMMISSIONER MC GAFFIGAN: The National Weather Service, at
19 least in this area, is not as predictable for seven days.

20 So I will let two ends of the table -- I appreciate that perspective.

21 MR. CALVO: Let me give you a perspective. The operator or the
22 independent system operator that continues to do a contingency analysis.
23 They are looking into the future.

24 The nuclear power plant there is providing megawatts and everything

1 is fine.

2 Now, that is what they call they first contingency, because in the
3 contingency analysis they perceive that because the margins are coming
4 down, there is a potential there that if you lose the nuclear unit, also you may
5 be able to bring down the offsite power system. That message goes back to
6 the nuclear plant operator. As the summer gets up and the margins get
7 shorter, that message is conveyed.

8 Based on the information, they are very responsible, very on top of
9 those things and they don't do maintenance. They schedule the
10 maintenance before or after -- because you have random failures and will
11 have to fix it. But they don't schedule maintenance at that time of the year,
12 particularly in the Northeast.

13 MR. CHEOK: I would like add to what he just said, Commissioner.

14 In addition to EDGs, we also have the turbine driven pumps and other
15 coping capabilities.

16 As I mentioned during the presentation, we have two draft reports out
17 for comment. And we have received comments on them.

18 One of the comments was on the way we model EDG reliabilities.
19 And I guess the comment that was said, that licensees would conform to the
20 maintenance rule and they will do -- take measures as to if there are
21 inclement weather coming or instability in the grid, that they would take
22 measures like that into account when they do maintenance on the diesel
23 generators.

24 COMMISSIONER MC GAFFIGAN: Can I ask Mike a question about

1 the SPAR models. You mentioned that we have this simplified plant
2 assessment models. Is that what SPAR is?

3 MR. CHEOK: It is standardized.

4 COMMISSIONER MC GAFFIGAN: We have them for each plant.
5 How are they updated?

6 I mean, you talk about this break point that seems to have occurred in
7 some of our data. How often does the staff update our simplified plant
8 models -- PRAs? It is not --

9 MR. CHEOK: It is standardized plant analysis risk models.

10 COMMISSIONER MCGAFFIGAN: These are not simple. They are
11 standardized.

12 But how often do you update them?

13 MR. CHEOK: We update them as often as we think is necessary. We
14 definitely update them when we do analysis of particular incidents. And we
15 will look at the data we have or the models we have to update them to make
16 sure that we are modeling the correct situation.

17 In this case, we did update our diesel and component reliabilities just
18 for this study, for the station blackout study.

19 COMMISSIONER MC GAFFIGAN: The station blackout study you
20 said was concluded just before the August -- it was a 2003 study. Is that
21 what you said?

22 MR. CHEOK: Actually, no --

23 COMMISSIONER MC GAFFIGAN: All the way through?

24 MR. CHEOK: There were two studies that done prior to the August

1 2003 event. One of them was to look at the effectiveness of the station
2 blackout rule. The second one was to look at the implications of deregulation
3 on the grid.

4 The study we just finished are studies, basically, to look at updated
5 data from the durations and updated data from the frequencies and updated
6 data from the component reliabilities to see if the station blackout risk is still
7 in conformance to what we had thought before.

8 This study is still current, and just we just completed these studies
9 over two months ago, two or three months ago.

10 COMMISSIONER MC GAFFIGAN: Two comments about timing.

11 The more I heard earlier, the more I agreed with Commissioner
12 Merrifield's original premises that June 1, if this is a bite size -- I forget what
13 the words that Jose used are, but if this temporary instruction is relatively
14 simplified compared to last year's, anything that can be done to speed up the
15 infamous NRC concurrence process would be appreciated by a second
16 Commissioner as well.

17 COMMISSIONER JACZKO: Another.

18 COMMISSIONER MC GAFFIGAN: We have got unanimity among the
19 Commissioners here today.

20 If this is a simple thing and we try to get it done and we are going to
21 get data that we are going to analyze relevant to this summer, then -- I know
22 it is scheduling the inspectors. We may get it done and then the inspectors
23 may not be able to do it . But it strikes me it is a good thing to get it done
24 earlier rather than later.

1 I would love to give it to you as a task before you leave. But I don't
2 think I can probably do that.

3 DR. SHERON: I'm not leaving so I will take it as a --

4 MR. CALVO: I mean, the -- process now is done. The technical --

5 COMMISSIONER MC GAFFIGAN: That is what I expect. Anything
6 that is going to be admitted from this space June 1st is usually done on April
7 26th.

8 MR. CALVO: It is done today. We just have to move it forward.

9 COMMISSIONER MC GAFFIGAN: Finally, I thought I heard Jose say
10 that with regard to the generic letter and evaluating the comments, that we
11 have -- it will depend on when the comments are -- how many comments we
12 get. And I think you said something about loss of staff?

13 MR. CALVO: We lost the author of the generic letter. He is retiring
14 this month. We are trying now to compensate for that, so that will add a little
15 time. We have to adapt to a new person. We will take care of it.

16 What we want to say is that we like to get it done as soon as possible.
17 But again, they got those factors in there. I don't want to come back to the
18 Commission every month saying, I'm sorry, we could not make it this month.
19 I would like to give you a day that is based on planning. That's what we are
20 trying to do.

21 COMMISSIONER MC GAFFIGAN: Well, there is generational change
22 occurring at every level of this Commission at the current time. Mr.
23 Merschhoff is better known to us, but I wish well whoever was the drafter of
24 the generic letter as well. I'm sure he or she has served the government for

1 a very long time as well.

2 But we have a long -- we are in the midst of a major generational
3 change at this place. And managing it well is going to be something that's
4 going to be a great challenge to the staff.

5 Do my colleagues have a final question?

6 COMMISSIONER MERRIFIELD: I don't have a final question.

7 In terms of final comment, I do appreciate the hard work that the staff
8 has put into both the draft generic letter as well as the temporary instruction.
9 And despite our pleas for going faster, which is sort of the standard thing for
10 to us do on this side of the table, I know it's hard work and it is something
11 that the staff is dedicated to.

12 I think in a general sense today, we have seen a lot of progress, I
13 think that is very appropriate.

14 I think the cooperation, the MOU's that we have engendered in the
15 course of the last few years has been a positive step towards enhancing the
16 communication and efforts collectively among the various parties that were
17 seated at the table.

18 Obviously, as they say, the proof of the pudding is in the eating and
19 we will have to see how things go this summer. Hopefully, all that hard work
20 up front will avoid some of the problems we have seen in the past, whether it
21 was 2003 or 1965. But I would certainly expect and hope that those kinds of
22 things would not happen again.

23 From my part, obviously, I have had a lot of interest in this issue
24 predating the August event, and certainly hope that the staff will continue to

1 keep the Commission informed in a current way in terms of the progress as
2 we go through the summer and into the autumn.

3 COMMISSIONER MC GAFFIGAN: Commissioner Jaczko?

4 COMMISSIONER JACZKO: I don't have anything.

5 COMMISSIONER MC GAFFIGAN: I will, as the elderly Commissioner
6 who actually lived through the '65 event in Boston --

7 COMMISSIONER MERRIFIELD: I lived through the '65 event. I may
8 not have been aware of it.

9 (Laughter)

10 COMMISSIONER MC GAFFIGAN: I will say that my father had a
11 theory. My younger brother was plugging something in at the exact instance,
12 and he was not very happy with my brother until he discovered the entire
13 Northeast had gone.

14 With that, we are adjourned. I do appreciate the testimony from both
15 panels today. Thank you.

16 (Whereupon, the hearing was adjourned.)

17