

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
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11 MICHAEL CHEOK, Asst. Chief, Operating Events Risk Analysis Branch, RES
12
13

P R O C E E D I N G S

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

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

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

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

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

44 COMMISSIONER MC GAFFIGAN: Commissioner Jaczko?

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

2 COMMISSIONER MC GAFFIGAN: Why don't we proceed with the
3 first panel. I know we have one member who has probably been caught up
4 in traffic somewhere. I don't know whether you all talked in advance about
5 who goes first, but I think Mr. McClelland, because he is a Federal official, I
6 will recognize him first.

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

11 Next slide, please.

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

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

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

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

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

28 The third is we have been coordinating with other agencies such as
29 the Nuclear Regulatory Commission, the Department of Energy and the
30 Department of Homeland Security. And our staff has been communicating,
31 and we have had good relationships and some project initiatives that I will
32 get into in just a minute.

33 Next slide.

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

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

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

43 You can see that -- it is probably hard to see on this slide. But it is
44 segmented into three groups. The groups are Planning. Planning works to

1 identify and investigate areas of congestion and constraint within the
2 Nation's bulk power supply system. In other words, on the grid.

3 Operations oversees the operation and maintenance activities of the
4 bulk power supply system.

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

8 And also security is cyber security. We have been very active
9 recently in cyber security.

10 Next slide, please.

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

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

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

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

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

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

37 We have studied and issued subsequent recommendations for best
38 practices and information technology and management for the industry's
39 consideration.

40 Next slide, please.

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

44 Several of our major initiatives are as follows:

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

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

8 Third, we have undertaken spare equipment investigations and
9 recommendations. This is important because in the grid itself, there are
10 components of that system that will take well over a year to manufacturer.
11 What happens if these components are lost? How much of the Nation would
12 see a bulk power supply shortage? What is the appropriate level of
13 inventory and what should we do to help encourage industry to get that into
14 place?

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

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

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

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

31 FERC is entitled to this information from industry. And because we
32 can get this information, we can then provide it, and we can all visualize this
33 together.

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

36 We have other projects in the works also, and we would like to closely
37 coordinate and have been with your staff in order that the agencies don't
38 duplicate our efforts, and that we can all bring our synergies to the table and
39 help adjust these issues as a whole rather than in segments.

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

41 MR. MC CLELLAND: Sure.

42 COMMISSIONER MC GAFFIGAN: This must be proprietary, I mean,
43 the information displayed on this visualization tool must be, because these
44 companies guard what is operating, what is not operating, and all of that. So

1 this is a proprietary visualization tool?

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

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

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

10 So have been and are entitled to receive this information from
11 industry.

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

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

15 And the last slide, please.

16 All of us the regulators, the industry, the customers and stakeholders
17 have a common goal of a reliable and secure bulk power system. To
18 accomplish this goal, FERC has been coordinating our efforts with our
19 counterparts in Canada, the states, and other agencies such as the NRC.

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

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

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

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

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

36 COMMISSIONER MC GAFFIGAN: Thank you.

37 Mr. Nevius.

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

40 I did not prepare slides but I did prepare some written remarks which
41 are on the side table, and I hope that you all will have a chance to review. I
42 just would like to take a few minutes to comment briefly on a few of the
43 highlights.

44 Before I do, I would like to address Commissioner Merrifield's

1 question about the legislation.

2 NERC and a broad coalition of organizations has long supported the
3 need for reliability legislation to create a system of mandatory enforceable
4 reliability standards.

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

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

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

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

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

21 I can tell you right now that with NERC's current budget and the
22 budgets of the ten regional reliability council members, we are already just
23 above that cap. This simply won't work.

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

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

28 Now, to my remarks. Again, you have on the side some written
29 remarks.

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

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

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

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

1 We are now conducting readiness audits of what we call reliability
2 coordinators and control areas, essentially those transmission grid operating
3 entities that are responsible for the bulk electric system.

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

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

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

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

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

23 The second area as far as the standard, we are developing a new
24 standard to ensure that the transmission system has the capacity and
25 capability to support the safe operation of nuclear plants even if one of those
26 plants happens to trip. The system has to be planned and operated to
27 assure that voltage frequency and stability requirements of each plant are
28 met.

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

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

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

40 I have detailed in my written remarks some of the things that are
41 addressed in this. I guess I would summarize by saying we have written it or
42 we have written the intent of the standard to address the unique
43 requirements of each plant, what appears in the design and licensing
44 requirements.

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

5 The third area I would like to touch on is the Memorandum of
6 Agreement. Both the Commission and NERC have an interest in ensuring
7 the reliable operation of the grid. And we recognize the importance of
8 working together.

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

13 We formalized that arrangement with a Memorandum of Agreement
14 that we signed last August that provides the general terms of cooperation.
15 And we identified several appendices that will be appended to that
16 Memorandum of Agreement.

17 We are getting close to signing off on those appendices. They will
18 cover communications and information sharing during and immediately
19 following an emergency.

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

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

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

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

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

36 In summary, NERC, supported by the industry stakeholders and
37 stakeholder groups, is prepared to continue with these initiatives that we
38 have underway and provide leadership in developing the necessary
39 improvements and coordination.

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

44 Thank you. I look forward to your questions.

1 COMMISSIONER MC GAFFIGAN: Thank you.

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

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

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

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

10 On behalf of NARUC, I really appreciate the opportunity to participate
11 in this hearing today to inform the NRC of state regulatory commissions'
12 activities in the area of ensuring reliability.

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

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

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

25 NERC has a compliance program in place but lacks an enforcement
26 mechanism.

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

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

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

37 Some states have taken action through their regulatory commissions
38 to make those standards mandatory.

39 Some commissions enforce their orders through penalties, fines and
40 other sanctions.

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

44 Based on these observations, in our resolution, NARUC resolved to

1 take two actions. The first one was to encourage states to consider making
2 the NERC standards and RRC criteria mandatory for jurisdictional utilities.

3 And secondly, develop by our summer meeting, model orders and
4 legislation which states may use to make those standards and criteria
5 mandatory.

6 To give the Commission a better understanding of our involvement in
7 states and reliability matters, I would like to point out that NARUC actively
8 participates in NERC in several ways. NARUC and the states, we act as
9 active observers of NERC activity. NARUC and seven individual states are
10 registered as voting members of NERC. The states have two
11 representatives on NERC's Standards Authorization Committee, which
12 develops reliability standards. We also have two representatives on NERC's
13 Compliance and Certification Committee, which is the enforcement arm of
14 NERC.

15 The states also have representatives on standing committees of
16 NERC such as the Planning Committee and their Operating Committee.
17 State regulators also participate in regular NERC briefings versus their
18 webcast.

19 Recent briefings have focused on these proposed changes to the
20 NERC reliability standards and industry compliance with existing NERC
21 standards.

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

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

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

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

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

38 In the most recent survey, 41 states responded. In response to that
39 survey, some states reported new proceedings regarding reliability. It is not
40 surprising that a lot of that activity was the result of the August 14th blackout.

41 Following the blackout, there were reports, as this Commission is well
42 aware of, by the joint U.S.-Canadian Task Force and NERC. In addition,
43 hurricanes caused widespread outages in 2003 and '04. And for an
44 example, the Oklahoma commission conducted a reliability rulemaking

1 proceeding in '04 and Delaware set interim reliability standards through
2 2005. According to this survey, this most recent
3 one, several states have formal standards on reliability and service quality.
4 In fact, 24 states require reporting and monitor reliability and service quality.
5 Twenty-one states have performance standards. And 15 states have
6 established penalties for failing to meet those standards or rewards for
7 meeting standards.

8 And the survey found that most states performance benchmarks are
9 utility-specific, although Illinois and New Mexico reported uniform, statewide
10 benchmarks.

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

17 Many states have specific requirements for tree trimming. Most states
18 responding to the survey cited the adoption of the National Electric Safety
19 Code with respect to tree trimming.

20 The states also have a variety of different power outage reporting
21 requirements. Twenty-five states require utilities to report the causes or
22 cause of outages. Twenty-three states require reports on the number of
23 customers affected by the outage. And 26 states require reporting on
24 outage duration.

25 Thirteen states reported that they have specific power quality
26 standards. Seven states reported that they account for service quality and
27 performance-based or incentive-based ratemaking, which has two more
28 states than in 2001.

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

33 This concludes my testimony and I appreciate the opportunity to
34 participate.

35 COMMISSIONER MC GAFFIGAN: Thank you.

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

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

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

42 MR. GARVIN: We can just highlight.

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

44 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.
25 There are a total of 29. So you can see that nuclear power is a significant
26 portion of what PJM operates on an energy source basis.

27 Next slide, please.

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

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

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

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

44 The first is cultural differences. There are significant gaps between

1 the communications language, the lexicon. I noticed there is an acronym list
2 on one of the handouts this morning.

3 Communications, though, might sound very basic and simple to you.
4 When it regards communications between grid operators and nuclear power
5 plants, it can actually get very complicated because we basically don't speak
6 the same language.

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

9 Next slide, please.

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

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

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

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

25 Next item is post-contingency voltage stability. This is an issue that in
26 PJM has gotten a lot of discussion recently. Many of the nuclear power
27 plants in PJM have more restrictive voltage limits than the grid does. PJM
28 has a set of grid limits, but the nuclear power plants because it is contained
29 in their licensing documentation, may have post-contingency voltages that
30 are more restrictive than PJM's.

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

33 Next slide, please.

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

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

43 Next slide, please.

44 The next slide basically shows PJM standards in our operational

1 philosophy. Here again, I think PJM may have a little bit different philosophy.

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

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

9
10 The last item I want to talk about is outage coordination.

11 There is definitely interest in a nuclear power plant in discussing and
12 making sure that the grid operators or the grid transmission owners who
13 have to do necessary maintenance on the transmission system are
14 communicating with the nuclear power plants such that that kind of
15 scheduled work can be done in conjunction with nuclear power plant outages
16 if at all possible.

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

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

23 Next slide, please.

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

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

31 Next slide, please.

32 I have excerpted one sheet out of the transmission operators manual
33 that really focuses on unit breakers at nuclear power plants. Here they are
34 specifically identified in our manuals.

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

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

42 COMMISSIONER MC GAFFIGAN: Thank you.

43 Mr. Leidich.

44 MR. LEIDICH: Okay. Thank you very much and good morning. My

1 name is Gary Leidich, President and Chief Nuclear Officer, FirstEnergy
2 Nuclear Operating Company. And I appreciate the opportunity to be here
3 today to offer my perspectives and really our perspectives from a nuclear
4 industry and operator of a nuclear facility.

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

6 MR. KOZA: We do acronyms.

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

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

14
15 So it is important to reiterate that.

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

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

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

36 Investments were made. Substantial investments were made. And
37 the focus of the industry was reliability and grid reliability. And, of course, as
38 we all know, since then market forces have been a substantial influence and
39 have actually taken a front seat, perhaps, as a result of the influence of
40 deregulation over the industry, and reliability has taken some other seat.

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

43 So there is a lot to be learned from history here. And I think the
44 actions that the industry is taking and the various parties are all taking are

1 heading towards repeating that situation where we ensure grid reliability has
2 the highest priorities.

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

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

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

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

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

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

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

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

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

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

38 In terms of utility actions, I think it is very easy to say and obvious to
39 conclude but it needs to be said anyway, that the August blackout has
40 caused substantially heightened awareness in our industry. There is not any
41 utility, and of course, particularly FirstEnergy, but there is not any utility that
42 has not been significantly impacted by the August blackout in terms of
43 understanding the precursors to the event, understanding the response to
44 the event and improving their operations accordingly.

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

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

9 There have been substantial enhancements. These are varied across
10 the industry. But certainly transmission control systems have been
11 enhanced.

12 We have invested substantial dollars as have others in improving their
13 control system.

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

25 And while there are Code of Conduct issues, I think it is very
26 straightforward, and we need to ensure ourselves that we keep it
27 straightforward to keep the Code of Conduct issues, that is the marketing
28 influences, if you will, separate from nuclear safety, above all, and also
29 separate from grid reliability.

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

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

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

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

1 We will as an industry through NEI be responding to comments on the
2 NRC draft generic letter. And of course, we are staying very closely coupled
3 with the NERC activities, both the audits and what we believe is the most
4 important thing, and that is the development of a standard for grid operation
5 and plant operation interface when it comes to nuclear power.

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

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

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

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

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

25 I offer a couple of examples of unintended consequences that could
26 occur. There is dialogue going on between the industry and NERC right now
27 on whether we do testing of our nuclear units for reactive capability. Most of
28 you are very well aware that actually a couple of events have occurred as a
29 result of those testing criteria.

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

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

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

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

42 Those are a couple of examples that I would offer where coordination
43 is of upmost importance.

44 Finally, I reiterate clarity and coordination is of fundamental

1 importance to us. There has been substantially increased awareness.
2 Reliability, I believe, has improved as a result of that. But there is more to
3 do, and I think we have all said that and we all need to work in that direction.

4 Thank you very much.

5 COMMISSIONER MC GAFFIGAN: Thank you.

6 Under Commission procedures, Commissioner Merrifield has the first
7 round of questioning today.

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

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

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

17 That notwithstanding, last year we issued a temporary instruction TI
18 2515/156 to our licensees to gather how they were preparing themselves for
19 the summertime period of operations related to reliability.

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

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

29 Another excerpt on page 7, "The staff found a good deal of variability
30 in the data collected in accordance with the Temporary Instruction regarding
31 grid reliability evaluations performed before taking risk significant equipment
32 out of service. Some NDPs communicate routinely with their TSOs once per
33 shift to determine grid conditions. All others rely solely upon the TSOs to
34 inform them of deteriorating grid conditions and do not inquire about grid
35 conditions prior to taking risk significant equipment out of service.

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

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

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

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

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

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

8 And secondly, the INPO review visits. The INPO review visits do look
9 at communication protocols. They do provide an assessment of whether or
10 not there are written procedures in term of frequency, breadth and depth of
11 those communication protocols.

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

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

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

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

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

32 Mr. Nevius, I don't know if you want to fill in or respond to what Gary
33 said or any comments you may have on the same issue. We have got some
34 gaps and there are some differences. How are we, from your eyes, bridging
35 some of those gaps?

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

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

43 One of the regional council members of NERC, the Southeastern
44 Electric Reliability Council has organized a workshop late in May to address

1 this transmission nuclear interface. And not only are they having nuclear
2 plant operators and grid operators from within the region, but they are
3 inviting others from other regions to participate and share practices on how
4 they are addressing these communications issues.

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

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

13 We are specifically citing examples of excellence in all areas of
14 reliable operation, and we singling out those cases where it involves this
15 nuclear grid interface.

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

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

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

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

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

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

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

37 MR. MC CLELLAND: That is a good question. We are working
38 through that now at FERC.

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

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

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

44 At the very least, FERC can position in order to put that entity on a

1 watch list, if you will, sort of the same as the NRC watch list.

2 COMMISSIONER MERRIFIELD: We don't use watch list any more
3 here.

4 COMMISSIONER MC GAFFIGAN: We have column four.

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

11 That is substantial in today's world.

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

16 So the very least that we do by finding that entity in violation of good
17 utility practice under the OATT, does have serious, could have serious
18 ramifications for the entity itself.

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

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

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

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

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

35 MR. MC CLELLAND: Absolutely. Absolutely.

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

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

41 In reviewing your testimony, you did have, I think, a very good point
42 about the fact that after seven years of considering this issue, Congress has
43 not passed legislation to make electric reliability standards mandatory.
44

1 What is the position of NARUC on mandatory electric reliability
2 standards?

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

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

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

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

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

22 I guess 41 states, you mentioned, had responded to that. At least in
23 regard to those that did respond, of that it looks like a bare majority, 24
24 states require reporting and monitoring of reliability and service quality.

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

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

33 COMMISSIONER MERRIFIELD: One last question real quick and I
34 have to pass.

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

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

40 MR. LEIDICH: Well, if you are asking me to represent the entire utility
41 industry, I am not sure I can do that. But I can certainly -- I guess my own
42 perspective on this, Mr. Commissioner, is that having gone through the post
43 65 era, one of the issues -- and I was heavily involved in ECAR at the time --
44 was that there does not seem to be any teeth in this process. That

1 organizations could not comply and there was nothing that came out of that.

2
3 My personal opinion would be some sort of a mechanism that gives
4 teeth in the process. Whether that is legislation or not, I think is very
5 warranted.

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

10 COMMISSIONER MC GAFFIGAN. Thank you.

11 Commissioner Jaczko.

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

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

20 Whoever wants to answer that.

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

26 And we do address in the draft standard authorization request issues
27 of communication protocols between the licensee and the entities
28 responsible for the operation and planning of the system.

29 So it would be subsumed as part of the overall set of standards that
30 would be established, monitored and enforced once the legislation is
31 enacted.

32 COMMISSIONER JACZKO: So that would be -- I guess the point is
33 that would be -- some type of enforceable standard would exist with those
34 communication?

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

38 COMMISSIONER JACZKO: Sure.

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

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

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

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

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

7 COMMISSIONER JACZKO: The next question I have is for Mr.
8 McClelland. You talked about, I guess it was the responsibility matrix that
9 you developed or you are working on to identify gaps. Can you give a little
10 more specifics about what some of those gaps are?

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

16 Every audit that FERC attended, which was every NERC audit, we
17 tracked those responsibilities and we assembled a matrix that we have at
18 FERC. And that matrix helps us to understand, at least prior to the
19 functional registration that NERC conducted, what entities were conducting
20 which responsibilities, and where there were gaps or overlaps. And we did
21 find gaps and overlaps.

22 COMMISSIONER JACZKO: Do those gaps still exist?

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

25 To my knowledge, most of those issues, if not all, have been
26 eliminated.

27 However, there still will be variances. I think it is important to say that
28 on the NERC audits themselves, when our folks attend those audits and
29 when the NERC team is questioning the transmission owners, the control
30 areas and reliability coordinators about communications with nuclear power
31 plants, per se, there are variations between entities. And those variations
32 need to be addressed.

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

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

44 One of the things I want to ask specifically about, and I think this was

1 something that you had mentioned, Mr. McClelland, is the operator
2 performance on the transmission side. And one of the things I'm wondering
3 is what training exists, who is responsible for ensuring that training exists and
4 establishing training standards for those operators? And then, is there
5 specific training to deal with nuclear power plants?

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

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

10 It happens this week we run a dispatcher seminar, where not only our
11 operators but all the member company operators and the generation
12 operators participate together in a joint training.

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

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

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

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

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

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

35 COMMISSIONER JACZKO: And, perhaps, Mr. McClelland, I don't
36 know if you can answer -- it is good to hear that work is going on. One of the
37 things that I think is clear and certainly that we found in our surveys is that
38 there is not and we don't have uniformity yet. That is an important goal.

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

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

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

5 COMMISSIONER JACZKO: I'm sorry what --

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

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

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

14 We are also going to be developing training standards. We are in the
15 process of conducting a training study. FERC is doing -- has done a survey,
16 and we are cooperating with FERC on this.

17 But out of all of this will come a training program and training
18 standards.

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

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

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

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

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

38 COMMISSIONER JACZKO: Did you want to add something?

39 MR. MC CLELLAND: Sure, I do.

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

44 Pages 156 and 157. This is recommendation number 19. There are

1 three parts. "NERC should require training for the planning" -- this is part A.
2 NERC should require training for the planning staff at control areas and
3 reliability coordinators concerning power system characteristics and load,
4 VAR and voltage limits to enable them to develop rules for operating staff to
5 follow."

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

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

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

14 Let's jump to the last paragraph.

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

19 Now, what has happened is this has become a more protracted
20 process. But it is very important as regulators of the industry, it is very
21 important that we stay on top of what this blackout recommendations are.
22 There are 46 of them.

23 How many of them are finished. How many of them have been
24 finished on time. How many have fallen behind. What are the reasons that
25 they have fallen behind. What should the coordination between agencies
26 be. I just can't emphasize enough -- having been in the industry for
27 20-plus years, and being new to government, I can't emphasize enough how
28 important it is for the NRC's safety interface with FERC, for us to interface
29 back with DHS and to interface over to NERC. So that these
30 recommendations are done with the full cooperation and consideration of
31 what is important to each of the parties.

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

37 MR. JACZKO: Thank you.

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

44 On the training issue, I know that from our experience, we have a

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

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

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

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

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

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

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

23 But this new program, the continuing education hours program, is
24 intended to raise the bar farther than we can with just a simple exam. To
25 require education, which will, in turn, require the organization that the
26 operators work for to provide the time and the resources for these operators
27 to take these courses and to have the simulator training or simulation
28 training.

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

30 COMMISSIONER MC GAFFIGAN: The people have simulators. Are
31 these simulators -- like nuclear power plants is faithful to the plant
32 configuration as we can make them. Are these simulators faithful to the PJM
33 configuration?

34 MR. KOZA: Ours are.

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

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

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

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

1 MR. NEVIUS: We have a standard now that requires reliability
2 coordinators and transmission operators and balancing authorities to have
3 NERC certified operators on shift.

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

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

10 COMMISSIONER MC GAFFIGAN: Can I ask a naive question again
11 about transmission?

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

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

19 How do the states see getting enough transmission?

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

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

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

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

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

39 But that is a significant challenge.

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

44 Obviously, that, in large part, is what is driving the federal back stop

1 authority. So there is a hammer so that there is a regulatory process that --
2 we don't want it to be easy. But it must have an end in terms of tackling
3 these issues.

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

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

12 MR. MC CLELLAND: Probably shouldn't.

13 COMMISSIONER MC GAFFIGAN: Okay. Refinery capacity -- you
14 know, NIMBYism is pandemic. And people -- gas pipelines, I guess, are a
15 problem, too. Electrical transmission is a problem. Refineries are a
16 problem. Power plants are a problem.

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

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

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

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

28 The Commission, the Federal Energy Regulatory Commission, the
29 Commissioners and the Chairman have gone on record to say we need to
30 have additional transmission projects built.

31 Many of the issues can be boiled down to really a couple of issues or
32 a couple of points.

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

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

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

43 That can really be boiled down to cost recovery. And there are siting
44 issues. There is definitely a NIMBY factor and there are, again, jurisdictional

1 disputes between states and between the Federal government, in some
2 cases with county, and in some cases between Federal agencies.

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

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

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

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

15 MR. MC CLELLAND: Yes, there is.

16 And one of the major obstacles --

17 COMMISSIONER MC GAFFIGAN: The backstop provision that Mr.
18 Garvin mentioned --

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

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

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

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

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

34 MR. GARVIN: Commissioner, I would add one thing. That is that last
35 point. It is not just siting but finding the cost causer. When you start talking
36 about regional transmission --

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

43 MR. GARVIN: I'm just saying that down the road, that will be the next
44 big fight if you have a regional transmission expansion plan, who is going to

1 pay for that line from the Dakotas down into the higher load areas of Chicago
2 and that area, because that's where you are going to see the real fireworks
3 when Wisconsin ratepayers are being asked to provide -- you know, we
4 would argue a disproportionate share for PJM market or whatever.

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

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

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

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

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

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

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

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

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

30
31 I'm wondering how is NERC dealing with some of those issues in
32 terms of the training, because those operators have to, in terms of
33 understanding some of those needs and understanding what those
34 requirements are, there needs to be an interface between the operators at
35 the nuclear power plants and the operators of the transmission
36 organizations.

37 How are you effectuating that level of
38 discussion such that those communications gaps that were raised can be
39 eliminated?

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

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

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

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

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

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

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

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

21 MR. KOZA: The other thing I want to add to that, I guess we focused
22 on the operator-to-operator interaction. There is a lot of this that goes on, in
23 essence, in the back office where the respective engineering staffs
24 exchange information, makes sure analysis is done correctly such that in
25 realtime that stuff is immediately available.

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

27 COMMISSIONER MC GAFFIGAN: Commissioner Jaczko has one
28 last question.

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

33 Where actually does that stand right now?

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

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

43 They are going to use our specific surveys as a follow-up or as a
44 supplemental piece to their own research which they are conducting in

1 parallel.

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

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

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

15 Thank you.

16 (Change in panel)

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

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

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

25 He has -- I don't know whether he strove to emulate Pat Norry and
26 Frank Miraglia in his direct communication with the Commission. But
27 whether he strove or not, he succeeded. And we look forward to talking
28 more about him at his going away session this afternoon.

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

31 Commissioner Merrifield?

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

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

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

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

1 COMMISSIONER MC GAFFIGAN: With that, Mr. Merschhoff, you
2 have the floor.

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

6 As you are aware, the NRC considers grid reliability a very important
7 issue.

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

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

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

16 To my right is Carl Paperiello, the Director of the Office of Research.
17 And to Carl's right is Mike Cheok, the Assistant Branch Chief of the
18 Operating Experience and Risk Analysis Branch.

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

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

24 Brian.

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

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

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

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

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

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

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

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

9 Today you will hear from Mike Cheok of the Office of Nuclear
10 Regulatory Research, who will present the results of the station blackout risk
11 analysis as the Commission had requested during the May 2004 briefing.

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

14 Then I will present the conclusions.

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

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

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

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

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

33 These four elements are included in our standardized plant analysis
34 risk or SPAR models in order to obtain station blackout core damage
35 frequency.

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

40 Next slide, please.

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

43 The trend is essentially flat for 1997 to 2002. The decrease in the
44 number of LOOP events is due to the decrease in plant centered and switch

1 yard centered events beginning in the mid-1990's. Only one plant-centered
2 LOOP event has occurred during the period 1997 to 2004.

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

6 Next slide, please.

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

11 The agency's industry trends program identified 38 plants scrams
12 occurring in 2003 and 2004 that are caused by grid-related problems and
13 problems with connections to the grid. Thirteen of these resulted in plant
14 trips with the loss of offsite power and were classified as grid-related LOOP
15 events in our study. All 13 of these events occurred during the summer
16 period.

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

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

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

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

26 MR. CHEOK: Eight of those were associated with the August 2003
27 blackout.

28 COMMISSIONER MERRIFIELD: Okay. Thank you.

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

33 Next slide, please.

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

37 Average durations have been increasing in part because of the
38 number of shorter duration events have been decreasing, while the number
39 of longer duration events have remained about constant.

40 Next slide, please.

41 This slide shows the results of the station blackout evaluation together
42 with results from two sensitivity evaluations. Industry mean, medium, 5th
43 and 95th percentiles are shown. The range shows plant to plant variation in
44 core damage frequency. For the baseline case, the industry average annual

1 mean SBO risk is in the mid 10 to the minus 6 range for the period 1997 to
2 2003.

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

9 To maintain this low SBO risk, we need to keep the LOOP frequency
10 and duration low, maintain EDG performance, and maintain SBO coping
11 capabilities.

12 The two sensitivity studies in the slide show the effects of degraded
13 EDG performance and the effect of the increased LOOP frequency during
14 the summer period. From these studies we note that, one, the SBO risk
15 approximately triples the EDG failure rates and unavailabilities are doubled;
16 and two, the annualized risk during the summer period is about twice the risk
17 average over the entire year.

18 Next slide, please.

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

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

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

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

33 MR. CALVO: First slide, please.

34 Thank you. I'm Jose Calvo, the Branch Chief of the Electrical and
35 Instrumentation and Control Branch of the Office of Nuclear Reactor
36 Regulation.

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

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

44 It should be noted from the grid-related actual data that offsite power

1 availability is potentially more challenged in the summer, and the grid is the
2 largest contributor to station blackout core damage frequency.

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

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

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

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

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

22 Next slide, please.

23 The Staff Requirements Memorandum from the May 10, 2004,
24 Commission meeting stated that the NRC staff in the Office of General
25 Counsel should work with the Federal Energy Regulatory Commission,
26 FERC, and the North American Electric Reliability Council, NERC, to develop
27 Memorandum of Understanding to facilitate interactions with these
28 organizations on matters pertaining to grid reliability. The staff has
29 completed this assignment.

30 The NRC has now a Memorandum of Agreement with NERC as well
31 as a Memo of Agreement with FERC.

32 These Memoranda of Agreement allow the NRC to control with NERC
33 and FERC with regard to the availability of technical information that will be
34 useful in the areas of mutual interest and to promote and encourage free
35 flow of such information pertaining to electrical grid reliability, security and
36 integrity.

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

39 The staff has communicated with various stakeholders including
40 Federal agencies, NERC, transmission system operators, industry institutes
41 and industry representatives. The NRC is currently working with NERC and
42 FERC in assessing grid operating data for change in emergency emerging
43 trends. This assessment should lead to the development of indexes to
44 gauge the impact on grid reliability that could be used to assist the

1 vulnerability of a nuclear power plant to a potential loss of offsite power
2 events.

3 Next slide, please.

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

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

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

16 The temporary instruction is currently in concurrence, and the staff
17 has targeted the issues of the temporary instruction no a later than June 1,
18 2005.

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

23 Also, will identify compensatory actions that the nuclear plants
24 operator takes when the transmission operator is not able to predict the post-
25 trip voltage at the nuclear power plant, also will focus and direct the nuclear
26 plant operator to perform grid reliability evaluations as part of the required
27 maintenance risk assessment before taking equipment out of service. And
28 finally, direct nuclear power plant operators to address the -- conditions that
29 emerge due to maintenance activity.

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

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

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

40 Staff was targeting the issuance of the final generic letter no later than
41 the end of the year.

42 The staff will also issue a temporary instruction to the regions to
43 inspect licensees' conformance with the NRC regulations and readiness of
44 nuclear power plants to cope with potential grid conditions during the

1 summer of 2005.

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

5 This concludes the staff's presentation.

6 COMMISSIONER MC GAFFIGAN: Thank you.

7 Commissioner Merrifield, you have the first question.

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

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

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

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

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

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

25 MR. CALVO: That's correct.

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

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

29 COMMISSIONER MERRIFIELD: Now, I know we were ahead of our
30 schedule last year. Looking back at the timetable, the Commission is about
31 a week ahead of where we were last year.

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

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

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

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

44 If you have read the draft generic letter, you will see that we have

1 raised the issue that there are certain regulations that we think a licensee
2 needs to have these protocols in place in order to really be able to
3 demonstrate that they are complying with the regulation.

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

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

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

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

14 COMMISSIONER MC GAFFIGAN: It helps the utilities understand
15 how we interpret.

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

17 MR. SHERON. Yes.

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

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

26 Now, that has not been issued yet.

27 Last year we issued it, and our inspectors undertook those
28 inspections, we did an analysis of that. The Commission was given results
29 of that analysis.

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

32 MR. CALVO: No. This particular TI is not only focused on -- that we
33 feel that it is important to ensure that a nuclear power plant meet our
34 regulations and also assures the readiness for the summer of 2005.

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

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

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

43 MR. MERRIFIELD: But I guess the question still exists. We will be
44 issuing a temporary instruction. We will be asking your inspectors to carry

1 out inspections relative to that temporary instruction. And we will be getting
2 results from the our licensees, either they meet the requirements or they
3 don't.

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

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

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

13 So we are talking about two weeks, three weeks. That is what my
14 staff says. Yes

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

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

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

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

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

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

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

37 So I would probably think that maybe more towards the end of the
38 summer, towards the fall we will be in a position to really tell you what we
39 found out.

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

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

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

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

8 COMMISSIONER MERRIFIELD: Okay. Do we have any
9 requirements or any expectations of operators at nuclear power plants for
10 their ability to appropriately communicate the needs of the plant and the
11 status of the plant to the TSOs?

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

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

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

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

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

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

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

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

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

41 COMMISSIONER MC GAFFIGAN: Commissioner Jaczko?

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

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

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

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

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

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

17 MR. CHEOK: Five in 2004.

18 COMMISSIONER JACZKO: Those were all separate and unique
19 events then?

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

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

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

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

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

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

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

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

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

1 grid related.

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

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

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

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

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

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

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

25 MR. MERSCHOFF: The training scenarios that operators will go
26 through in the simulator often include loss of offsite power events and station
27 blackout events. When those occur, external communications are a part of it
28 but are often played, the receiver of the phone call, by an instructor.

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

32 COMMISSIONER MC GAFFIGAN: Thank you very much.

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

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

42 MR. CALVO: Look at it this way: Most of the tech specs that we have
43 today say that if you determine that this grid is degraded to the point that it
44 will not be capable of providing offsite power to emergency boxes, then you

1 enter the tech specs, and you have got 24 hours, 24 hours for that situation
2 to correct.

3 I cannot imagine a grid for 24 hours is in that condition. You go there,
4 the part that is of concern that if you are doing maintenance and you are
5 having a diesel generator out for service, that is the main concern. You want
6 to be sure to do what you can to put that thing back in service because now,
7 you getting vulnerable to a potential or worse than the other one, you get into
8 the station blackout position.

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

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

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

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

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

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

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

29 Do people -- either one of you, do people, de facto, do that in the
30 industry today? During the summer months when the risks are double or
31 whatever numbers you used earlier, do they try to stay away from tests
32 surveillance and emergency diesel generator maintenance? Or do they
33 evaluate it under 50.65A4 and go ahead with it? What does a prudent
34 licensee do?

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

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

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

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

1 MR. MERSCHOFF: Seven days. On occasion, longer usually
2 shorter.

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

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

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

9 The nuclear power plant there is providing megawatts and everything
10 is fine.

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

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

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

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

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

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

33 COMMISSIONER MC GAFFIGAN: Can I ask Mike a question about
34 the SPAR models. You mentioned that we have this simplified plant
35 assessment models. Is that what SPAR is?

36 MR. CHEOK: It is standardized.

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

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

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

43 COMMISSIONER MCGAFFIGAN: These are not simple. They are
44 standardized.

1 But how often do you update them?

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

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

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

11 MR. CHEOK: Actually, no --

12 COMMISSIONER MC GAFFIGAN: All the way through?

13 MR. CHEOK: There were two studies that done prior to the August
14 2003 event. One of them was to look at the effectiveness of the station
15 blackout rule. The second one was to look at the implications of
16 deregulation on the grid.

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

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

23 COMMISSIONER MC GAFFIGAN: Two comments about timing.

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

30 COMMISSIONER JACZKO: Another.

31 COMMISSIONER MC GAFFIGAN: We have got unanimity among
32 the Commissioners here today.

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

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

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

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

42 COMMISSIONER MC GAFFIGAN: That is what I expect. Anything
43 that is going to be admitted from this space June 1st is usually done on April
44 26th.

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

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

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

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

14 COMMISSIONER MC GAFFIGAN: Well, there is generational
15 change occurring at every level of this Commission at the current time. Mr.
16 Merschoff is better known to us, but I wish well whoever was the drafter of
17 the generic letter as well. I'm sure he or she has served the government for
18 a very long time as well.

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

22 Do my colleagues have a final question?

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

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

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

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

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

40 From my part, obviously, I have had a lot of interest in this issue
41 predating the August event, and certainly hope that the staff will continue to
42 keep the Commission informed in a current way in terms of the progress as
43 we go through the summer and into the autumn.

44 COMMISSIONER MC GAFFIGAN: Commissioner Jaczko?

1 COMMISSIONER JACZKO: I don't have anything.

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

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

6 (Laughter)

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

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

13 (Whereupon, the hearing was adjourned.)
14