BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

1001st Commission Meeting

Thursday, January 15, 2014

Hearing Room 2C

888 First Street, Northeast

Washington, DC 20426

The Commission met in open session, pursuant to notice, at 10:03 a.m., when were present:

COMMISSIONERS:

CHERYL A. LaFLEUR, Acting Chairwoman

PHILIP MOELLER, Commissioner

JOHN NORRIS, Commissioner

TONY CLARK, Commissioner

FERC STAFF:

KIMBERLY D. BOSE, Secretary

JEFF WRIGHT, Director, OEP

MICHAEL McLAUGHLIN, Director, OEMR

MICHAEL BARDEE, Director, OER

JOSEPH McCLELLAND, Director, OEIS

DAVID MORENOFF, Acting General Counsel

NORMAN BAY, Director, OE

EDWARD GINGOLD

P R O C E E D I N G S

(10:03 a.m.)

CHAIRWOMAN LA FLEUR: Good morning. This is the time and place that has been noticed for the open meeting of the Federal Energy Regulatory Commission to consider the matters that have been duly posted in accordance with the government and the Sunshine Act.

Please join us in the pledge of allegiance.

(Pledge.)

CHAIRWOMAN LA FLEUR: Good morning. Since our open meeting on December 19th we have issued 56 notational orders. Before turning to my colleagues I have two announcements. The first relates to the Commission's combined federal campaign effort which just concluded this week. I'm happy to report that Commission employees pledged $418,000 to the campaign, nearly ten percent over the goal set for the Commission. Participation exceeded 53 percent, which was more than triple that of the federal government as a whole, and obviously great results, and the campaign supports a variety of charities here locally right in the neighborhood all the way to around the world.

So I want to thank everyone who worked on it, It Does Take a Village, the Office Captains, key workers and the Committee members, but particularly Campaign Chair Anton Porter, and the inimitable Edward Gingold who is

sitting in the back of the room, who put so much passion into his role running the campaign.

At the closing event for the employees this week I learned -- I had not known that Combined Federal Campaign was started by John Kennedy, it was his idea when he was President, so this is the 52nd year, it seems appropriate after we just marked the 50th anniversary of his death. So thank you.

Secondly, I want to announce a personnel change. Jim Pederson has decided to accept the position of Associate Director in the Office of Energy Policy and Innovation. He will begin that post February 8th. In his new role, Jim will be working with Jamie and Mason and the team there, focusing on infrastructure policy, including both natural gas and electric infrastructure. He has a very extensive background in both, and will also serve as a liaison to the Department of Energy on certain matters, they have a lot they are starting over there.

Obviously Jim brings a wealth of experience to this job and I know he will be a terrific addition, but I want to thank you, Jim, for your help and support to me over the past two months as I've settled into this role, I really appreciate it, and look forward to working with you in your new capacity.

With that I'll turn to my colleagues for any

announcements. I know Tony had one.

CHAIRMAN CLARK: Yes, I have a personnel change as well to announce. Tiffany Gray who has been with me for the year and a half that I've been here, is going to be taking a new position in our HR Department, a new position that has been opened up than. I wanted to thank Tiffany and congratulate her on that.

And, I also wanted to announce Meghan Estenson who is here as well, and as a number of you know has been with me for about a year now, will be taking over Tiffany's duties. That changeover transition over about the next week or so, and will all be effectuated by January 27th. So, congratulations to both.

Since you are wearing your Patriots shirt, Madam Chair, I would be remiss if I also didn't recognize my pin here, the North Dakota State University Bisons won their third straight SCS national title earlier this month, congratulations to the Bisons.

My other undergraduate university, Michigan State, also didn't do too shabby this year, but out of respect for Commissioner Moeller I'm not going to mention the outcome of the Rose Bowl game.

CHAIRWOMAN LA FLEUR: Thank you, Tony.

Madam Secretary, I think we are ready to go to the Consent Agenda.

SECRETARY BOSE: Good morning, Madam Chairman. Good morning, Commissioners. Since the issuance of the Sunshine Act notice on January 9th, 2014, item E-10 has been struck from this morning's agenda. Your Consent Agenda is as follows. Electric items, E-1, E-2, E-3, E-4, E-5, and E-9.

Gas items G-1. Certificate items, C-1. We will now take a vote on this morning's Consent Agenda and the vote begins with Commissioner Clark.

COMMISSIONER CLARK: I vote yes.

SECRETARY BOSE: Commission Norris?

COMMISSIONER NORRIS: Aye.

SECRETARY BOSE: Commissioner Moeller?

COMMISSIONER MOELLER: I vote aye.

SECRETARY BOSE: Madam Chairman La Fleur?

CHAIRWOMAN LA FLEUR: I vote aye.

Thank you, Madam Secretary, if we could move on to the discussion agenda.

SECRETARY BOSE: The first item for presentation and discussion this morning is A-3, concerning the Hydropower Regulatory Efficiency Act of 2013. There will be a presentation by Cleo Deschamps from the Office of General Counsel, and Christopher Chaney and Timothy Konnert from the Office of Energy Projects.

MS. DESCHAMPS: Good morning, Madam Chairman and

Commissioners. Today we are here to provide you with an overview of the Hydropower Regulatory Efficiency Act of 2013 and to report some of the steps we have taken so far in compliance with the Act. We will also look ahead at the relicensing workload over the next few years.

On August 9th, 2013 the Hydropower Regulatory Efficiency Act was signed into law. Hydropower is the largest source of clean, renewable electricity in the United States, it provides nearly 7 percent of the Nation's electricity and about 100,000 megawatts of the Nation's electricity capacity. In Section 2 of the Act, Congress finds that there is substantial potential for adding hydropower generation to non-powered dams given that only 3 percent of the 80,000 dams in the United States generate electricity.

The Act affects the Commission regulation and regulation in four ways. For projects at existing dams that qualify for a small hydropower exemption, Section 3 of the Act amended PURPA by increasing the maximum allowable capacity for these projects from 5 megawatts to 10 megawatts.

Section 4 provides that conduit hydropower facilities with an installed capacity that does not exceed 5 megawatts and which meets the Act's other qualifying criteria, are not required to be licensed under the Federal

Power Act. It also increases the maximum installed capacity from 15 megawatts to 40 megawatts for a privately developed hydropower facility that qualifies for a conduit exemption. Previously the 40 megawatt maximum was only available to municipal projects.

Section 5 of the Act provides the Commission with the authority to extend preliminary permits for up to two additional years beyond the three years previously allowed under Section 5 of the Federal Power Act.

And lastly, Section 6 requires the Commission to investigate the feasibility of a 2-year licensing process for hydropower development at non-powered dams and closed-loop pumped storage projects.

So at this point we are well into implementing the Act. Soon after the Act was passed, we updated our website to provide guidance on how to apply for conduit and 10 megawatt small hydropower exemptions, qualifying conduits, and preliminary permit term extension, and to date we have received no applications by a private developer for a 40 megawatt conduit exemption, and we have received no applications for 10 megawatt small hydropower exemption, but we have approved requests for a number of qualifying conduits and preliminary permit term extensions.

In addition, staff has begun investigating the

feasibility of the two-year licensing process in compliance with Section 6 of the Act. Staff held an initial workshop, has solicited written comments on the process, and issued a notice listing projects to test a two-year licensing project.

So Chris Chaney is now going to discuss the qualifying conduit program, and then Tim Konnert will provide an overview of the preliminary permit term extension requests, as well us more information on the two-year licensing process. Tim is also going to speak about the anticipated increase in the relicensing workload.

MR. CHANEY: As Cleo noted, under Section 4 of the Act, certain qualifying conduit hydropower facilities up to 5 megawatts are no longer required to be licensed under the Federal Power Act.

The Act requires those wishing to take advantage of this provision to file a Notice of Intent to Construct a Qualifying Conduit Hydropower Facility with the Commission. Within 15 days of receiving such a Notice, the Commission makes an initial determination on whether the facility meets the qualifying criteria. If the facility meets the qualifying criteria, Commission issues a public notice for 45 days. The Commission then issues a letter approving the facility unless it receives comments contesting that action.

Staff prepared guidance on these procedures, including a template of the Notice of Intent, and this is a available on the Commission's website, along with a table showing the status of all Notice of Intent filings.

To date, 18 Notices of Intent have been filed, 16 have been approved, one was rejected because it did not meet the criteria, and one is pending.

The approved projects ranging in size from 10 kilowatts to 4.8 megawatts, and projected to produce about 31,000 megawatt hours annually, are mostly located within the Western United States. The one project that was rejected was proposed to be located in Maryland and the one still pending is located in Utah.

Currently the average processing time from the filing of a Notice of Intent to the final determination is 63 days.

Staff expects to see a significant number of these filings in the future based on industry inquiries and comments.

MR. KONNERT: As Cleo noted, the Act authorizes the Commission to extend the term of preliminary permits for one 2-year period beyond the three years previously allowed by the Federal Power Act.

Permittees who wish to extend the term of their permit must file an application with the Commission at

least 30 days prior to the expiration date of their current permit. In this application, the applicant must specify the requested term of the extension and describe how it has carried out activities under its permit in good faith and with reasonable diligence.

The process ends with the Commission's action on this extension request.

Currently there are 270 issued preliminary permits. Staff has received seven applications for extensions of permit terms. Of these permit term extension applications, two were granted, three were denied due to lack of diligence during the three-year initial permit term, and two are currently pending.

Pursuant to Section 6 of the Act, staff conducted a workshop on October 22nd, 2013, to solicit input on the feasibility of the two-year licensing process for projects that are located at existing, non-powered dams and for closed-loop pumped storage projects.

In addition to testimony received at the meeting, 16 comment letters were filed following the workshop by interested developers, licensees, federal and state resource agencies, trade groups, and other interested parties.

Based on the workshop testimony and written

comments, staff developed a two-year process and issued a Notice on January 6, 2014 soliciting prospective license applicants to file a request to test it.

As directed by the Act and informed by the workshop, staff developed criteria that a prospective applicant should follow in development of a pilot project. These criteria require that the project must cause little to no change in existing surface and groundwater flows and uses, the project must be unlikely to adversely affect federally listed threatened and endangered species, and for a closed loop pumped storage project, the project must not be continuously connected to a naturally-flowing water feature.

The Notice also states staff's expectation that prospective applicants project proposals will be developed and well defined. In addition, the Notice requires that the prospective applicant prior to filing its request consult with the affected federal and state resource agencies, Indian tribes, non-governmental organizations, and the public regarding its projects. They must also provide a summary of verbal comments and copies of any written comments received in response to the meetings with it request to test a process.

Pursuant to the Notice, the window for filing a request to test a process begins on February 15th, 2014,

which, under the Act, is the date the Commission is required to implement the pilot project testing. The filing window ends on May 5th, 2014.

If the Commission receives and grants a request to test a pilot project, testing will begin in the Spring to Summer of 2014 and continue through the Spring to Summer of 2016.

Pursuant to the Act, the Commission will hold a final workshop to solicit public comment on the effectiveness of each pilot project by no later than February 5th, 2017, and submit a report of its findings to Congress by no later than April 6th, 2017.

At this point I would like to switch gears and provide you with an overview of our projected relicensing workload over the next few years. We are anticipating a substantial increase in the filing of relicensing applications beginning in 2019 and continuing you through 2025.

Together these relicense applications represent over 9500 megawatts of installed hydroelectric capacity.

Preparation of a license application under the default licensing process requires early and intensive staff involvement up to three and a half years prior to the license application filing deadline. Due to this, even though the first of the relicense applications are not due

to be filed until 2019, staff anticipates experiencing effect to its increased workload as early as the latter half of 2015.

This concludes our presentation and we would be happy to answer any questions that you might have.

CHAIRWOMAN LA FLEUR: Well, thank you very much, that was really interesting. I think this is a noteworthy topic for several reasons, but certainly one of the most important is this was the only amendment to the Federal Power Act that has happened while I was here, and it seems you have done a lot of work in five months to implement it. So thank you very much for that.

We don't frequently have a chance to recognize the hydro part of our operation at open meetings, but it's obviously a very important part of the Commissions work, and indeed our longest-standing responsibility.

I do have a couple questions. In a couple years we'll be sitting here trying to figure out if the two-year hydro licensing pilot project was a success. Can you elaborate at all on what are the factors, the key factors that will determine whether the pilot licensing is a success or not, and if there is any guidance you can give to either industry or the states about how to make the two-year program a success, because obviously we would like to it work if we can make it work, but we are not in

control of that ourselves, it depends on what we get from the industry and our state colleagues.

So I will give you an opportunity to elaborate on that.

MR. CHANEY: I can speak to that. I think that success is going to hinge largely on the project proposals, the locations of the projects in terms of the issues of how the project proposals. It also is going to hinge on whether the persons have gone out and done the appropriate consultation with the stakeholder groups and the agencies in regards to potential effects and studies what needs to be done on the front end, front load the process, really.

And the essential would be going out and telling people in terms of just, before this act came about in terms of getting through our process quickly, is really front end loading that consultation process and getting a complete project in here so we can move forward with it when we get it.

CHAIRWOMAN LA FLEUR: Thank you. The other thing I would just like to note is that significant increase in the relicensing workload, is there a historic, I mean why is it that all of a sudden they are all coming up, it must have something to do with when the last licenses were issued.

MR. CHANEY: Yes, we did a little bit of

research on this. It's actually a combination of factors, some of which is the second relicensing of projects that were initially licensed back in the 1930's, there are also a couple of court cases back in the '60's that clarified our jurisdiction, that caused a lot of projects to come in for licenses where their licenses were backdated to 1963.

So we had a whole bunch come in for relicensing in the early '90's that we are seeing coming back around again. So it's really a combination of factors that has caused it.

CHAIRWOMAN LA FLEUR: Thank you. Reading that biography of the Doris Kearns Goodwin's book on Teddy Roosevelt that came out that everyone got for Christmas, and it talks a lot about trying to figure out the hydro potential in the West in the early part of the last century, so it's sort of interesting to think that some of these things started again.

So thank you very much.

Colleagues? Commissioner of Hydro?

MR. MOELLER: Well, Madam Chair, thank you for calling item and shining a light on the importance of hydropower, it's a significant part of our energy resource mix, a lot of the public may not realize, our five regional offices all have about 500 projects that they regulate from a safety and environmental perspective throughout the

country. But of course in the West, hydro is much more significant, particularly in my home of Pacific Northwest.

And I want to thank Mr. Wright, head of the Office of Energy Projects and staff who are really taking this on I think quite well, and implementing the law as directed by Congress.

And as you noted, Madam Chair, this was a successful piece of legislation, bipartisan, sponsored, prime sponsored by my friend Congresswoman Cathy McMorris Rogers, by Congressman DeGette from Colorado, and Chairman Ron Wyden of the Senate Energy Committee and Ranking Republican Lisa Murkowski were all supportive.

It's always frustrating when you go out in the West and you see all this potential for conduits and types of irrigation canals that we can't take advantage of essentially the power of gravity moving that water and hopefully this is a good step in that direction. So, again, thank you for calling this item.

CHAIRWOMAN LA FLEUR: Thank you, Commissioner Moeller.

MR. NORRIS: Just like Phil said, all of that water moving and not tapping into it seems like a wasted opportunity, so I'm glad Congress took this action. And I look forward to hopefully seeing some quality applications

in the coming months, and thank the team for your work not just on this project, but as has been noted, glad to have you, make a presentation today, it's an important piece of our work. It runs so smoothly we never hear much about it, so that's great. Thanks.

CHAIRWOMAN LA FLEUR: Commissioner Clark?

CHAIRMAN CLARK: No questions, but thanks to the team for all the good work that you are doing, and that's actually pretty exciting stuff, so good work, thanks for following it up, and I join in the sentiments of my colleagues.

CHAIRWOMAN LA FLEUR: Thank you very much.

Madam Secretary?

SECRETARY BOSE: The last item for presentation and discussion this morning is Item A-4, concerning the recent weather effects on the bulk power systems. There will be a presentation by David Burnham from the Office of Electric Reliability, Alan Haymes from the Office of Enforcement, and Michael Moon from the North American Electric Reliability Corporation.

They are accompanied by Ted Franks from the Office of Electric Reliability, Valeria Annibali from the Office of Enforcement, and Anna Fernandez from the Office of General Counsel, and there will also be a PowerPoint presentation on this item as well.

MR. BURNHAM: Good morning, Madam Chairman and Commissioners. I am here to provide an update on the bulk power system performance during last week's extreme cold weather event.

The information of the presentation is derived from details provided by NERC, the Regional Entities, and the reliability coordinators, along with some public sources. NERC continuously monitored the system during the polar vortex event and was in contact with both Commission staff and the industry through the week.

Commission staff and NERC would like to thank all of the entities for providing us with additional information to support this presentation. We note that much of the information in this presentation is preliminary and subject to further verification and revision.

Last week, cold temperatures stressed the bulk power system with high loads, increased generator forced outages, and other challenging operating conditions. The bulk power system remained stable and generally performed reliably throughout the event. The credit for this good outcome goes to the many system operators and other utility personnel who worked long and hard, and communicated extensively with each other to keep the grid up and running.

Beginning on Sunday, January 5th and continuing

through Wednesday, January 8th, a significant cold weather system moved across the Eastern and Central United States. Temperatures were generally 20 to 40 degrees below normal for this time of year. For example, Monday temperatures remained around 15 degrees below zero in Minneapolis, and barely reached 10 degrees in Nashville.

Atlanta, meanwhile experienced over 50 consecutive hours of sub-freezing temperatures, and Indianapolis had 33 consecutive hours of sub-zero temperatures. For many areas, cold weather this severe and widespread had not been seen since the mid-1990's.

In the days leading up to the cold snap, system operators and generator owners took steps to prepare their systems and equipment for the freezing temperatures. For generators, such actions typically include the deployment of additional insulation, supplemental heating to prevent critical components from freezing, and dual-fuel capability testing.

System operators worked to cancel or postpone scheduled outages, commit additional resources, request information about fuel restrictions, and ensure adequate staffing. MISO, for example, arranged for operating personnel to stay onsite to ensure full staffing during the event.

Neighboring system operators shared information

with each other regarding weather forecasts, resource availability, and other pertinent information. This coordination continued as the weather event developed, as system operators with excess generation worked to make additional power available to neighboring markets.

The Friday prior to the cold snap, PJM filed an application with the Commission for a week-long waiver of certain non-disclosure provisions from the PJM operating agreement. As granted by the Commission, the waiver allowed PJM to engage in unit-specific review of day-ahead plans with the interstate natural gas pipelines to help ensure that adequate supplies of natural gas were available and to confirm unit availability.

Also earlier in the fall, the Commission conditionally accepted a series of ISO New England tariff revisions implementing the ISO's Winter Reliability Program. Among other things, this program established an oil inventory service for oil-fired and dual-fuel units. The ISO has reported that oil was firing around one quarter of the total generation in the region at peak, roughly equal to the amount of generation burning natural gas.

In the aftermath of the event, system operators are comparing their next-day load projections to actual loads, and considering the need for any changes in their load forecasting models.

At this time, it appears that the Midwest, Northeast and Southeast regions set record demands for natural gas, while other parts of the Eastern and Central U.S. were near their all-time peaks. One compressor station outage on the Texas Eastern pipeline in Western Pennsylvania resulted in throughput reductions of nearly 600,000 decatherms per day, or about ten percent of the pipeline load. Most other pipelines curtailed interruptible or secondary firm transportation and storage services.

While fuel restrictions certainly stressed the electric supply, system operators were able to maintain reliable electric service. In New England, for example, six units totaling around 1200 megawatts were not able to secure fuel initially when called by the ISO. This request, however, was made on behalf of another RTO and did not affect power supply in New England.

Electric system operators have also reported that their gas-electric coordination procedures generally worked well. For example, MISO contacted several gas pipelines starting on January 3, and made subsequent schedule adjustments in order to ensure adequate generation.

In addition to gas restrictions, system operators reported problems such as frozen coal stockpiles

at coal-fired generating stations, and problems with fuel switching at dual-fuel units. Wind turbines were also affected by the cold, with some wind turbine models reaching their minimum operating temperatures. Two nuclear units tripped due to equipment problems, but it is not clear at this time if the problems were related to the cold temperatures.

On the whole, preliminary data indicates that forced outages were significant in some regions. However, more analysis is needed to determine how much of this is weather-related.

Demand response was also helpful during the event. For example, the New York ISO requested voluntary demand response on January 7th so that it could assist another RTO seeking resources.

Many system operators in the Eastern United States broke their winter peak demand records. MISO, SPP, ERCOT, PJM, and the New York ISO all set winter peak demand records, as did most of the utilities in the Southeast.

NERC's Winter Assessment, which was released last month, forecasted adequate reserve margins across the country for this winter. This forecast was based on "50/50" or average weather. Due to the extreme temperatures, the peak loads last week were often much

higher than forecasted. For example, actual system load exceeded the winter assessment forecast by approximately 7 percent in PJM, and around 9 percent in MISO.

MISO was the first region to be affected by the cold weather, setting a new all-time winter peak of nearly 110 gigawatts on Monday. There were no problems attributed to the recent integration of the MISO South region, and the Reliability Coordinators in the area agreed to temporarily raise the MISO South transfer limit 2000 megawatts to 2500 to allow additional power to be delivered to other regions.

ERCOT issued an energy emergency alert, deployed demand response and made media appeals for conservation on Monday morning, but did not need to resort to additional emergency procedures. On Tuesday morning, ERCOT set a new winter peak demand record of over 57 gigawatts, just slightly above the previous record peak from the February 2011 cold snap.

The SPP region established a new winter peak of nearly 37 gigawatts on Monday. SPP issued an energy emergency warning for one balancing authority for a few hours, but did not need to use other emergency procedures.

In the Southeast, many utilities set all-time winter peak demand records and issued calls for conservation. Duke Energy Carolinas and South Carolina Electric and Gas implemented voltage reductions on Tuesday

morning. Several generating units also tripped in the SCE&G area, forcing the company to implement rotating outages and shed approximately 300 megawatts of firm load during the morning peak. The load was restored later in the morning.

PJM experienced high loads and tight operating conditions from Monday evening through Wednesday morning. On Monday evening, PJM's reserves were particularly tight, and the RTO directed member utilities to implement a 5 percent voltage reduction. The voltage reduction was in effect for around one hour.

On Tuesday afternoon, PJM set a new winter peak of around 141 gigawatts. During this time PJM employed demand response and requested emergency energy purchases from neighboring markets, but did not need to invoke other emergency procedures.

In the Northeast, the New York ISO set a new winter peak of nearly 26 gigawatts on Tuesday. ISO New England was well below their all-time winter peak, and did not call for any emergency procedures.

I will now turn it over to Mike Moon, Senior Director for Reliability Risk Management at NERC, who will provide an overview of NERC's event analysis activities and lessons learned from the February 2011 cold snap.

MR. MOON: Madam Chair, Commission staff, thank

you for the opportunity to participate in the presentation today.

The Federal Energy Regulatory Commission, NERC and NERC's stakeholders share a common interest in ensuring the reliability of the bulk power system of North America. Thus, as Mr. Burnham indicated, we have been working this past week with your staff and the utilities to gather the data you have just heard, and this data is consistent with what we have learned from the industry.

However, the facts presented today should not be considered an event analysis in and of itself. Rather, the preliminary data will help direct analytical efforts, which will include lessons learned and recommendations for further improving preparation and processes during extreme circumstances.

For example, the forced generation outages in the most severely impacted areas of the Eastern Interconnection on January 6th and 7th appear to be minimally 50 gigawatts. Upon a rudimentary analysis, this is higher than the historical wintertime average forced outage of 33.4 gigawatts. Additional analysis is needed to understand the initial outage numbers and their overall context of performance relative to historical trends, recognizing that not all outages were due to the weather.

The Event Analysis program is a fundamental and

critical component that supports the electric reliability organization by providing insight and guidance to the identification and dissemination of valuable information to owners, operators and users of the bulk power system. The high level of stakeholder commitment to identify lessons learned after events and striving to achieve the highest leveling of reliability is the primary foundation of this program.

The ability to learn and develop sound recommendations and lessons learned for industry are the fastest way to proactively inform industry of reliability risks and provide positive steps to improve reliability. The continued encouragement of collaboration and voluntary disclosure of events and disturbances by registered entities is critical to this rapid learning and reliability focus. The ability to track lessons learned and measure their impact is still maturing. Lessons learned are now published with a survey capability embedded to better gauge the industry use and understanding of these publications. Required reports have been received, and NERC staff is currently analyzing and identifying areas for further analysis.

I can tell you that the TRE and ERCOT region, there have already been some initial site visits conducted. Event analysis reports will be provided to NERC and the

Regional Entities and then we will conduct root cause and contributing cause analysis with registered entity participation.

In addition to discussing data collection and analysis related to the recent polar vortex weather phenomena I would also like to provide a brief synopsis of the lessons learned from the 2011 Cold Weather Event of February 1-5, 2011.

FERC and NERC released a joint staff report on that Cold Weather Event in February 2011. The report detailed 26 recommendations for the electric industry. Thirteen targeted lessons learned were published over the course of the year beginning in September of 2011. These lessons learned covered a range of critical functions to include staffing, design, maintenance, operation and training.

Using the key findings and recommendations from the 2011 Cold Weather Event Report, seven lessons learned were developed that focused on maintaining individual unit reliability and preventing weather-related generation outages. These lessons learned detail preventative and corrective actions for cold weather issues that can affect generation facilities, such as unit design, freeze protection, fuel switching, required onsite materials and resources, and training personnel.

Two lessons learned focused on transmission equipment during winter weather situations. These lessons learned addressed issues related to transmission equipment outages and recommend that transmission facilities be inspected for areas where water could collect and freeze. Pressurized gas, and oil systems must also be maintained with adequate parameters to safely operate during extreme cold, especially in geographic areas not accustomed to these freezing temperatures for prolonged periods of time.

Four lessons learned focused on reliable Bulk Power Situational operation and situational awareness during cold weather events. Impacted entities must maintain an accurate and shared understanding of available and committed capacity resources on a real time basis. Improved coordination between gas and electric entities will ensure maximum generation with available firm gas supply and minimize non-firm gas supply generation with alternatives in place if gas becomes unavailable.

Finally, in February 2013, the NERC Operating Committee, after a rather extensive, broad industry process, drafted and published an extensive reliability guideline, "Generating Winter Weather Readiness - Current Industry Practices." This guideline provided a comprehensive and detailed attachment that lists elements of a winter weather preparation procedure. These practices

support all of the 26 recommendations of the joint FERC and NERC's report on the 2011 cold weather report. Coupling these guidelines with the annual webinars also reinforces industry action.

In conclusion, while we are still in the preliminary stages of analysis, we have established a solid foundation to learn from events and the disturbances, to identify the reliability risks and, ultimately, to further enhance reliability efforts. Again, it is too soon to draw detailed comparisons of performance in 2011 versus last week, or assist the extent to which entities avoided the particular mistakes of 2011, but in broad scope certainly the overall outcome was better, which suggests that the efforts made since 2011 have yielded a change for the better.

In terms of next steps, NERC and the Regional Entities will continue the efforts already underway to get the details of what happened and why they happened from transmission operators, the generators and others, so that we can identify any aspects of performance still needing improvement. This will be an extensive effort, but we are confident that we can reach the goal of maintaining last week's good performance and improving any shortcomings that may later be identified.

I wish to thank FERC for the invitation and

attention. I will now turn it over to Mr. Haymes.

MR. HAYMES: U.S. gas demand hit 137 Bcfd on Tuesday, January 7, 11 Bcfd over the previous winter record set in the winter of 2008 and 2009. The demand records were breached in the Midwest, the Northeast and the Southeast, which added to constraints on the pipelines delivering gas to the Mid-Atlantic and Northeast. Consequently, natural gas prices averaged over $70/MMBtu along the I-95 corridor between Richmond and New Jersey, with some intraday trades close to $100/MMBtu.

Although greater access to Marcellus shale gas via the New Jersey-New York pipeline expansion gave New York City some relief, prices still reached $57/MMBtu. Boston gas prices spiked less than New York and Mid-Atlantic prices to $34/MMBtu helped by slightly higher temperatures, backup oil generation, and liquified natural gas (LNG). The Chicago area saw gas prices spike to nearly $14/MMBtu on Monday, the highest in ten years.

Many interstate natural gas pipelines issued operational flow orders. Two unplanned compressor station outages on Spectra Energy's Texas Eastern Transmission pipeline contributed to constraints into New York City and gas generator outages in PJM. A number of Northeast and Midwest local distribution companies reported pressure drops on their systems, asking non-essential customers to

voluntarily curtail gas use. Well freeze-offs in some major producing basins reduced natural gas supply, just as demand was peaking. Supply from the Marcellus formation dropped by 1 Bcfd per day, but it has since recovered.

In the electricity markets, on-peak average real time prices soared to as high as $765 per megawatt hour in PJM, and $510 in the New York ISO as natural gas prices and demand spiked upward.

Among the most stressed areas, system conditions in PJM included under-forecast load and more than 30 gigawatts of generator outages. Prices on Monday rose to as high as $1200 per megawatt hour during the evening peak when PJM implemented the 5 percent voltage reduction mentioned earlier. Subsequently, on Tuesday morning prices reached the administratively set price of $1800 per megawatt hour for approximately four hours as emergency demand response was called.

The cold weather forced natural gas and power prices higher in New York, New England and MISO. New York requested voluntary demand response, but the demand response was not activated or requested in New England. Fuel oil had a $37 per MMBtu advantage over natural gas in New York and a $13 per MMBtu advantage in New England. Thus, oil-fired and dual fuel units could run economically given the spread between the fuels. By the end of the week

the price spread had reverted to normal levels with a price spread of approximately $19, once again in favor of natural gas.

This concludes our presentation, we are happy to answer any questions you may have.

CHAIRWOMAN LA FLEUR: Well, thank you very much to all of you. And a special thanks to Michael Moon and NERC for helping to support the gathering of data and being here for this presentation. Thank you all to you and your team for pulling all of this information together so quickly, obviously this just happened last week.

I also just want to recognized all of the work that went on last week around all of the control rooms and the pipelines and the power plants to keep the lights on and the gas flowing, and give a shout out to the ISO's and others who kept the Commission informed in real-time, which we really appreciate while it was going on.

We made the decision to put this item on the agenda because we thought it was very timely, but I do want to emphasize that obviously it's not, as Michael said, doesn't reflect an event analysis yet because that will now be beginning, just as you highlighted what was learned from 2011 we can now learn from this process.

It did to me, though, some of the themes that you all covered highlighted, underscored the importance of

some of the work we already have under way, certainly the focus on the inter-dependency between gas and electric and some of the work that has been done up in New England to get ready for this winter was highlighted. More generally the work on the capacity and energy markets to make sure we have the resources in place where we need them, which has continued to be a significant focus.

And I was also happy to hear about the sharing between different regions, which highlights the importance of transmission and the team's work that's been going on really everywhere between New York and New England, between PJM and MISO, between MISO and SPP, you see what those protocols really do in a time like this.

My question, I'm mindful that I think it's, I think it's January 15th, so there is more winter ahead. I am interested in how, or if people know how we are situated for the rest of the winter. Some of what I have read is partly because of last week and other things gas storage is much more depleted than usual at this time. Do you anticipate any issues as a result of that or other issues?

MS. ANNIBALI: Thanks, Madam Chair, I'll take that question. Right now the inventories stand at almost a five-year minimum in storage, and that's about 15 percent lower than last year. And about ten minutes ago, I guess 15 minutes ago, EIA reported storage of last week which was

anticipated to be record levels.

Given the storage levels of inventory right now, and estimates going through the end of the winter, we have tried to estimate and we anticipate end of withdrawal season for storage to be below the five-year minimum, but still about twice as much as an all time low record recorded at the end of March 2003. And with the levels of production these levels should be sufficient to supply markets of natural gas supplies absolute any extreme weather event or unusual circumstances once again.

CHAIRWOMAN LA FLEUR: Thank you very much.

Mr. Moeller?

MR. MOELLER: Thank you, Madam chair. A few points and then a question. Thank you for bringing this up, and thank you for emphasizing that it's preliminary in nature, you've worked hard obviously to get this presentation together in such a short amount of time. And we'll look forward to the analysis that comes out of it, however long it takes, hopefully not too long, with the focus on doing any change in the operational procedures and how sufficient are our resources, whether they are supply side or demand side in terms of deliverability.

I really liked the highlighting of the 2011 report. And I think what is different this time is that from my understanding from talking to a lot of the people

who were involved in that, I have a bulletin from Norman Bay's office, is that there were about five similar outages in the Southwest over the last 35 to 40 years. And they all had nice reports that got put on the shelf. And the difference between those reports and the 2011 report is that a lot of us made sure that it stayed an active issue, and so that those 34 recommendations, mostly the states and PCS's in the region were acted upon.

And I think it's a good lesson that you keep an event alive in terms of event analysis and lessons learned, it can make a difference, and I'm hoping that when we do the same for this event we'll keep those recommendations and ideas active until they are implemented, because it was cold, but it could have been colder, and it could have lasted a lot longer than essentially two days and a weekend, so we have to stay on alert.

The question I have is, do you have any idea right now the total number of megawatts that couldn't be generated because of a lack of natural gas supply?

MR. MOON: I do not at this time. Preliminary data is still rolling in, adjustments are still rolling in. We have got to be the honest broker, and we are going to see things in the media, lots of numbers, and we have got to bring hones information, we've got to bring validated information to get to the policy discussions and decisions.

So you know, it will take some time, it took approximately 7 months after the 2011 event to publish that report.

This is obviously a geographic area much greater, it involved inter-coordination, not just between two sectors, electricity and gas, but inter-coordination with ISO RTOs, overall the reliability was maintained. So there is a broader scope and scale to this that will require greater analytic efforts. This will be one of the areas we are also very interested in to really get to the root of what those numbers are and to validate those for you, sir.

MR. MOELLER: Thank you, we saw that the early numbers were about 9000 megawatts in PJM that was unavailable because of a lack of gas supply, but I, again, it highlights our ongoing work on electric and natural gas coordination. I think it's fair to say there may have been a few in PJM who didn't think this issue would affect them, and I think there is universal recognition now that this is a significant issue in PJM as well. Thank you.

CHAIRWOMAN LA FLEUR: Mr. Norris.

MR. NORRIS: Thank you. I also appreciate your comments and congratulate the system operators and all the utilities and everyone involved in managing this challenge. And also say, this is great information so far, but I think you are absolutely right, Michael, take your time and be

the honest broker here, that's what we really, really need.

As I read some of the news articles this morning already characterizing some of the studies and already characterizing this as a ongoing problem with power grid reliability, I think that's a little premature, before we have information that would point that out to folks.

And I would just say, this is unique because we had record peak demands across a wide swath, almost the entire nation. So I am curious, what triggers, Michael, what triggers an event analysis? I mean you had the 2011, we had serious outage areas, where in this case with some limitations, very few outages. What triggers the analysis for NERC?

MR. MOON: What triggers a full event analysis, there are two parts to this, sir. First of all, one, we have to encourage the industry to look at every single event and disturbance. Within our event analysis process we have five categories fairly well defined, depending on a number of elements out, number of load or loss to generation, so there is a guideline to the industry to help them do their own initial first self assessment.

Depending on the severity obviously we can take matters to higher levels, whether it's a higher level joint FERC-NERC inquiry like we did for 2011 report, but ultimately there is also a lot of flexibility in this

process, and where we see a broad impact like with this weather phenomenon, I call it, then we need to have some leadership in how we direct the efforts, the coordination analyzing the information.

So, again, we have guidelines for entities on when to do event analysis, and you expect them to do it for every event and disturbance and report us to. Our level of involvement depends again on the severity, and I think that's what is critical. And while this was not one event on the BPS, it was one weather phenomenon that affected many entities. So we look to coordinate the efforts of event analysis both at the entity levels and at the regional levels, and then across the interconnections and certainly the connection with TRA.

MR. NORRIS: Good, that was helpful. I think -- yes, every event should be analyzed, but your engagement here on this, I think it's critical. I would say -- I'm sure it's going to be the case, but not just engaged on what wasn't done right, but accent what was done well, and enabled us to manage this incredible record peak across the region.

I would just say towards that end things I will be looking for are lists of record peak demand across almost the entire nation, what can we do to manage demand more effectively, other than just a generation, I think

it's a scope of gas-electric coordination which we are grappling with, but it's also a demand issue, and are we doing enough on demand side energy efficiency, not just in this case on the electric side, but on the gas side as well. Now that we going to be impacted going forward with energy efficiency with gas as well as on the electric side.

So how demand response was implemented, how effective it was, I think it will be particularly important as you have areas like MISO who is now looking at some potential shortfalls in 2016 and beyond, but haven't really developed a demand response to the capacity the way that PJM has, yet this could be very informative for other regions in the development of their DR going forward.

But curious, I'm not going to ask you now, as you mentioned time to do a full report, why we had over 30,000 megawatts in outages seems to be problematic, and also curious about the 1200 megawatts in ISO New England and why it was unable to be utilized.

Those are just some surfaced topics I just point out. I think that we appreciate the information we have received so far, and look forward to the full report. Thank you.

CHAIRWOMAN LA FLEUR: Thank you.

Tony?

CHAIRMAN CLARK: No questions for the team, but

thanks for pulling together a lot of information in a short amount of time. And special thanks also to all of the folks in the ISO's and RTO's who both throughout the event who have providing the Commission as the Chairman indicated with information, with a lot of good information, but subsequent to that as well have been providing us with information that is really helpful in assessing a number of issues that the Commission has in front of it right now and will probably have, in light of the experiences that we had coming out of this event, will probably have an impact on future dockets and how this, how we assess things across a number of different performance platforms.

Thanks for your work and look forward to ongoing discussions and getting more information available to us.

CHAIRWOMAN LA FLEUR: Thank you very much. I think last week was the first time that Tony has ever thought it was cold.

CHAIRMAN CLARK: I wouldn't go that far. It was a pleasant average winter day.

CHAIRWOMAN LA FLEUR: Thank you very much, and with this, the meeting is adjourned.

(Whereupon, at 10:52 a.m., the hearing was adjourned.