Responses of Acting Chairman Cheryl A. LaFleur
To Committee on Energy & Commerce
Subcommittee on Energy & Power
Preliminary Questions for the Federal Energy Regulatory Commission

The following questions relate to the U.S. Environmental Protection Agency's ("EPA") recently proposed "Clean Power Plan." *See* Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34830 (June 18, 2014), referred to herein as the "Proposal" or "Clean Power Plan."

Interagency and State Coordination

1. **During an Energy & Power Subcommittee hearing on June 19, 2014, EPA Acting Air Administrator Janet McCabe testified that electric reliability "was paramount in our minds as we worked through the proposal" and that EPA "consulted with FERC and DOE and other agencies that have this as a chief responsibility." She stated that "I or my staff have consulted with staff at FERC. They are part of the interagency review process that we always go through, and so they have given us their input on electric reliability."**[1]

    a. **Describe each consultation you have had with EPA regarding the Proposal, including where it occurred, the date(s) on which it occurred, with whom it occurred and identify any other participating agencies. Also provide details of the outcome of those consultations and relevant materials relating to those consultations.**

Answer: In my interactions with EPA regarding MATS and other environmental regulations, I expressed my willingness to be engaged in discussions regarding new regulations of carbon emissions. The list below provides information about meetings with EPA related to the development of the Proposal.

On February 7, 2014, I and others from FERC met with EPA officials at FERC headquarters. At the meeting, the EPA officials described in very general terms aspects of the Proposal. On February 18, 2014, FERC staff met with EPA staff at EPA headquarters in Washington, DC, as a follow-up to learn more about the Proposal.

On March 6, 2014, FERC staff met at EPA headquarters with staff from EPA and DOE to discuss certain concepts proposed in a paper by RTOs related to the Proposal.

On April 16, 2014, FERC staff met with EPA staff at EPA headquarters in Washington, DC, to review parts of a draft of the Proposal and to ask about certain issues and information in the Proposal.

[1] Further, the Proposal states that "EPA has met on several occasions with staff and managers from the Department of Energy and the Federal Energy Regulatory Commission to discuss our approach to the rule and its potential impact on the power system." *See* 79 Fed. Reg. at p. 34899.

On April 23, 2014, FERC staff participated in a telephone conference with staff from the EPA and the Office of Management and Budget (OMB) regarding a draft of the Proposal. FERC staff provided oral comments on the draft Proposal, which focused primarily on reliability. FERC staff commented on the draft's contemplated increases in the capacity factor for natural gas combined cycle units, renewable generation, and coal heat rates. In particular, FERC staff commented on pipeline and other infrastructure adequacy given the potential increased utilization of natural gas combined cycle units and renewable generation in the draft Proposal. FERC staff also commented on the advisability of regional collaboration among states and some form of a "reliability safety valve."

On May 29, 2014, FERC staff met with staff from EPA at EPA headquarters in Washington, DC. EPA staff provided FERC staff with an oral summary of the draft Proposal.

On July 18, 2014, FERC staff met with EPA staff at EPA headquarters in Washington, DC. The EPA staff provided FERC staff with an oral update on the public response to the Proposal.

b. Did EPA request that FERC provide written advice or an analysis regarding the potential impacts of the Proposal on the reliability of the electric grid? If yes, provide a copy of the request and any resulting advice or analysis.

Answer: EPA did not request written advice or analysis regarding the potential impacts of the Proposal on the reliability of the electric grid. As described in my testimony, FERC staff engaged in discussions with EPA staff.

c. Are you aware of any outreach by EPA to the North American Electric Reliability Corporation (NERC) regarding reliability impacts prior to issuing the Proposal? If yes, to your knowledge what was the nature of that outreach?

Answer: I am unaware of any outreach by EPA to the North American Electric Reliability Corporation regarding reliability impacts prior to issuing the Proposal.

2. The Proposal includes a Technical Support Document entitled "Resource Adequacy and Reliability Analysis." *See* EPA-HQ-OAR-2013-0602-0368.

a. Did FERC prepare this analysis?

Answer: No.

b. To your knowledge, did NERC prepare this analysis?

Answer: To my knowledge, no.

c. To your knowledge, did FERC or NERC assist in the preparation of this analysis or consult with EPA regarding its preparation or its results? Please provide relevant details and materials.

Answer: FERC staff discussed various issues with EPA staff, particularly aspects of the "building blocks" and EPA's modeling results, but did not specifically assist in the preparation of this analysis or consult with EPA regarding its preparation or its results. I do not know if NERC had any involvement in this document.

d. Did FERC have an opportunity to review this analysis before the Proposal was announced?

Answer: Yes.

e. Has FERC independently reviewed this analysis? Does FERC agree with EPA's conclusion that the "proposed rule will not raise significant concerns over regional resource adequacy or raise the potential for interregional grid problems"? *See* 79 Fed. Reg. at p. 34899.

Answer: FERC staff is still reviewing this analysis. As I explain in my testimony, as state compliance plans are developed, it will be important that energy infrastructure and markets adjust to support those plans. I would note, however, that compliance is not required until 2020, and then can be met by average performance over 10 years subject to certain limits. For example, a coal-fired unit needed for reliability after 2020 can continue to run, including under a reliability-must-run contractual arrangement, so long as State-wide emissions meet the proposed targets through other means. In this respect, the proposed rule differs from the MATS rule, which requires coal-fired units to comply individually. The flexibility allowed under the Proposal for each State to customize compliance tools can help significantly in this regard. Also, reliability concerns depend in part on when and where preparations for compliance are initiated by electric utilities, natural gas pipeline companies and others. Timely efforts in the right locations can mitigate reliability issues in meeting the level of compliance needed in 2020.

3. The Proposal states that the "EPA and other federal entities, including . . . the Federal Energy Regulatory Commission (FERC) . . . are committed to sharing expertise with interested states as they develop and implement their plans." Please explain when and in what manner FERC expressly "committed" to sharing its expertise with States. Please provide relevant details and materials.

Answer: As discussed in my testimony, the Commission has worked closely with state regulators through the FERC/NARUC Forum on Reliability and the Environment. I remain committed to sharing FERC staff expertise with states as they develop and implement their plans to comply with any final rule promulgated by EPA. This commitment was discussed by FERC staff with EPA staff, but staff does not recall with specificity at which meeting it was discussed.

Clean Power Plan Impacts on Fuel Diversity and Electric Reliability

1. Has FERC independently analyzed EPA's Clean Power Plan to determine the impact it could have on generating unit retirements and potential impacts on fuel diversity and electric reliability? If yes, what were the results of this evaluation? If not, does FERC

intend to independently analyze the Proposal to evaluate potential impacts on fuel diversity and electric reliability?

Answer: FERC has not specifically analyzed the Proposal to determine the impact it could have on generating unit retirements or potential impacts on fuel diversity. Retirement of a unit is an economic decision for the unit's owner, unless a unit is required or requested to remain in service (with appropriate compensation) to ensure reliability. As I have noted many times, an important component of reliability is ensuring that the competitive markets FERC oversees appropriately value the contributions of diverse resources. Following on our April 1 technical conference, the Commission will continue to examine fuel diversity and its impacts on reliability.

2. EPA projects nearly 180 gigawatts of generation capacity will retire between 2010 and 2020 in response to the Clean Power Plan and other factors, such as EPA's previously finalized Mercury and Air Toxics (MATS) rule. EPA's Option 1 model specifically identifies each electric generating unit expected to retire by 2020 by name, location, and capacity. *See* EPA-HQ-OAR-2013-0602-0368 and EPA-HQ-OAR-2013-0602-0220.

> **a. Does FERC staff possess the expertise to complete an independent reliability assessment that (i) geographically plots each of the specific units identified in EPA's model for retirement and each unit that has already retired or announced retirement; and (ii) evaluates the potential regional, state, and local reliability impacts resulting from such retirements?**

Answer: FERC staff has the expertise to geographically plot each of the units identified, and the capability to evaluate reliability on regional, state and local levels. However, to do so in regards to the Proposal involves making many assumptions on key factors, such as the extent and distribution of load reductions from energy efficiency, the number and location of new NGCC generation, and economic conditions such as fuel prices. Given the uncertainty and substantial number of assumptions, the results from any study would depend greatly on the assumptions chosen as inputs. Thus, a study could be more speculative than informative, especially for later years.

> **b. Will you commit to having FERC staff complete such an independent assessment prior to October 1, 2014, so that the public may understand the potential impacts on reliability prior to submitting comments on the Proposal, due on October 16, 2014? If not, why not?**

Answer: As noted above, given the uncertainty and substantial number of assumptions, the results from any study would depend greatly on the assumptions chosen as inputs, such that a study could be more speculative than informative, especially for later years. FERC staff will continue to engage with stakeholders to fully understand the issues and concerns.

Clean Power Plan Impacts on Electricity Markets

1. Would existing organized wholesale electricity markets have to be redesigned to implement EPA's Proposal? For example, are Regional Transmission Organizations (RTOs) prepared to transition from economic to environmental dispatch? Did EPA consult with FERC regarding the feasibility of switching from economic to environmental dispatch? What RTO implementation challenges would environmental dispatch present?

Answer: As I have frequently stated, to the extent state compliance plans depend upon changes in the utilization of generation resources, they could have implications for market operations. However, I note that EPA's proposed rule would give the states significant flexibility to design their own compliance plans, so it would be premature for me to speculate on the changes that might be needed to the design of organized wholesale electricity markets. In the past, these markets have been able to successfully integrate state and regional environmental requirements, including greenhouse gas reductions, into their economic dispatch. For example, the organized wholesale electricity markets in the Northeast (ISO New England, New York Independent System Operator and PJM Interconnection, L.L.C. (PJM)) have been able to successfully accommodate the requirements of the Regional Greenhouse Gas Initiative (RGGI) into their market designs. Generators that must purchase emissions allowances under RGGI are able to include the cost of the allowances in their market bids, and those costs are reflected in the economic dispatch. RTO dispatch rules have accommodated certain external factors, and some RTOs (including PJM and the Midcontinent Independent System Operator) have developed procedures to incorporate environmental requirements that limit the number of hours a generating unit may operate into their economic dispatch.

2. EPA's Proposal wrongly assumes States dispatch electricity. Given that electricity is actually dispatched by RTOs or other market operators on the basis of competitive market results, how would State compliance plans be implemented in electricity markets?

Answer: It is correct that states do not dispatch electricity. However, RTOs, ISOs, and electric utilities that are responsible for dispatching electricity also do so in compliance with applicable federal and state regulations. Given the flexibility EPA's proposed rule would provide to states to design their own compliance plans, it is not possible to specifically answer how State compliance plans would be implemented in electricity markets, if the rule is adopted. Those decisions will be made based on the actual State compliance plans once they are developed and approved.

a. Would a State Implementation Plan (SIP) take priority over market dispatch performed by an RTO?

Answer: As noted above, how states ultimately choose to design their compliance plans to meet the requirements of any final rule issued by EPA will determine how RTO market dispatch procedures will be impacted. RTO dispatch rules are capable of taking into account various external factors, such as limited run times necessitated by environmental or other licensing requirements or minimum run times required by generator operating requirements. FERC has a role in ensuring that the regulatory rules under its jurisdiction for wholesale electric, interstate electric transmission and natural gas pipeline transportation and natural gas pipeline permitting are sufficient to account for any regulatory changes required by the EPA rules.

b. Would a SIP take priority over bilateral contracts between a buyer of power in one State and a seller of power in another? If so, how, and what is the authority for this?

Answer: Whether a state compliance plan would take priority over bilateral contracts would depend on the specific provisions of the state compliance plan, the terms of the contracts, and applicable law. An individual bilateral contract may have specific provisions pertaining to treatment of the contract if new regulations affecting the generating resource are adopted. In addition, given the significant flexibility the proposed rule would give States to design their compliance plans, and the extended compliance period, States appear to have the opportunity to account for existing bilateral contracts as they decide how to achieve the final required emissions reductions.

c. Would a State have authority to compel the continued operation of existing nuclear power plants if those plants are not being dispatched in wholesale electricity markets because their bid costs are too high compared to other generation?

Answer: States may have the authority to utilize regulatory tools to provide financial support to encourage the continued operation of a power plant (including existing nuclear power plants). The scope of this authority may depend on the state's retail regulatory structure.

d. How would RTOs reconcile conflicting SIPs within a region?

Answer: How an RTO would reconcile conflicting requirements in the State compliance plans in their region will depend on the nature of the specific conflict and how it impacts the RTO's operations. However, to the extent states within an RTO pursue individual State compliance plans or adopt multi-State plans that are not consistent with the boundaries of the RTO, there may be the need for the RTO to work with the States and others in the region to ensure that the requirements of the plans can be effectively and efficiently implemented. The RTOs recognize the key role they will play in working with states and stakeholders in their regions; in comments cited by the EPA in the preamble to the propose rule, RTOs offered to provide analytic support to help states develop their plans.

3. EPA's Proposal is silent on the treatment of purchase power agreements and interaction of energy markets for States that are net importers versus exporters. Do you believe that EPA's Proposal adequately addresses interstate power flows?

Answer: EPA's Proposal recognizes the benefits of such trading opportunities, subject to the transfer limits between the electrical regions defined in its modeling. Concurrently with the proposed rule, EPA released a "Technical Support Document: Resource Adequacy and Reliability Analysis" that, among other things, explains how EPA took interstate power flows into account when developing its proposal and modeling the impacts of the proposal on the electric grid. This document states that EPA used its Integrated Planning Model (IPM), which divides the continental United States into 64 sub-regions. EPA explains that "IPM addresses reliable delivery of generation resources for the delivery of electricity between the 64 IPM

regions, by setting limits to the ability to transfer power between regions using the bulk power transmission system." (pg. 2). This type of analysis is similar to the methods used by industry for resource adequacy analysis.

4. Do you believe that EPA's Proposal could result in stranded financial investments for units that have been retrofitted with emissions controls for other programs, such as EPA's MATS rule? What impacts could this have on the owners of stranded assets, wholesale energy markets and consumer electricity costs?

Answer: Changes in regulatory requirements can at times result in stranded financial investments by owners of regulated assets like power plants. The extent to which the EPA's proposal, if adopted, could result in stranded investments depends on many factors, including the ultimate design of State compliance plans and the compliance deadlines in any final rule issued by EPA. For example, States would appear to have the flexibility to adopt compliance plans that allow units that have been retrofitted with emissions controls to continue to operate, and to instead adopt other measures to reduce overall emissions from fossil-fired power plants and satisfy the emissions requirements. In addition, the extended compliance period in the proposed rule appears to give states the flexibility to continue to operate retrofitted units while they transition to other lower-emitting electricity sources or adopt demand-side measures to reduce emissions. The proposed rule would require initial emissions reductions over a 10-year transition period from 2020-2029, and require compliance with the final emission reduction goals by 2030.

The impacts of any ultimately stranded investments on asset owners, wholesale markets, and consumers will similarly depend on many factors, including the magnitude of any stranded investment resulting from a final rule and whether state regulators allow asset owners to recover those investments in future rates. While large amounts of stranded investment can negatively impact the earnings of asset owners and lead to higher consumer rates, states have experience addressing stranded costs and have ratemaking tools available to them to minimize such impacts.

Increased Reliance on Natural Gas, Renewables and Energy Efficiency

1. EPA's Clean Power Plan contemplates natural gas combined cycle (NGCC) plants running at a 70% capacity factor to displace a significant amount of coal-fired generation. EPA's regulatory impact analysis projects pipeline capacity increases of 4-8% beyond base case projections by 2020.

> **a. Has FERC analyzed whether the natural gas infrastructure exists to reliably serve NGCC plant needs while preserving reliable gas service for non-power generation use?**

Answer: As I stated in my testimony, FERC staff emphasized that in light of EPA's proposal to rely on increased capacity factors for natural gas fired generation resources, gas pipeline adequacy should be considered from a regional perspective, not just a national perspective, due to existing constraints on the system. As I previously stated, an important role for FERC as the

states implement their compliance plans is to support development of needed gas pipeline infrastructure through our permitting and ratemaking authority.

b. Did EPA consult with FERC regarding the adequacy of natural gas infrastructure prior to publishing its Proposal?

Answer: As noted above, FERC staff discussed this issue with EPA staff prior to publication of the Proposal.

c. Given the challenges of gas supply in the most recent winter, and continued concerns about gas deliverability to certain parts of the country, do you agree with EPA that its modeled capacity increases are feasible by the initial compliance date of 2020?

Answer: As noted above, the construction of adequate natural gas infrastructure will be an important factor affecting the implementation of the state compliance plans. The feasibility of the increases by 2020 depends on a variety of factors, including whether gas users make timely commitments to support the infrastructure expansion. I believe that the time needed for FERC's certificate review and construction itself is unlikely to impair feasibility and am committed to continuing to ensure that FERC permitting processes are effective and efficient.

2. Has FERC completed any electric transmission system capability and reliability analysis that demonstrates that the increases in NGCC plant utilization that EPA assumes in its Proposal could replace retired coal-fired generation are practicable, taking into account the location of the coal plants being retired and the location of existing NGCC plants?

Answer: No.

3. Has FERC analyzed the integration issues (*e.g.*, voltage control, natural gas backup power, etc.) associated with a substantial expansion and deployment of intermittent renewable energy resources, as contemplated by EPA's Clean Power Plan? Did EPA consult with FERC regarding these integration issues?

Answer: FERC staff discussed these issues with EPA staff and pointed out that shifts in supply resources would require consideration of voltage control and other related issues. I note that NERC and others are continuing to assess these issues.

4. Has FERC studied whether under the EPA Proposal additional transmission lines would need to be built to integrate more renewables, where the lines may be built, and how long it may take to site, permit and build these lines? Has FERC estimated the cost of transmission necessary to supply increased renewable resources under EPA's Proposal?

Answer: FERC has not studied the extent to which EPA's proposal, if adopted, would require the construction of additional transmission to integrate renewables, or where specific transmission infrastructure might be built and the time it would take to permit and construct such infrastructure. FERC has also not estimated the cost of transmission that may be required under

EPA's proposal. However, FERC staff provided input to EPA staff regarding the general time required to construct new transmission infrastructure needed to integrate remote renewables.

Planning for future transmission needs is conducted by planning authorities, RTOs and utilities. FERC-jurisdictional utilities, including the RTOs, conduct such planning pursuant to regulations adopted under Order No. 890 and, once fully implemented, Order No. 1000. These regulations require public utility transmission providers to engage in local and regional transmission planning to identify new and upgraded transmission lines that are needed to maintain reliability, address uneconomic congestion, and satisfy public policy goals enacted by federal, state and local authorities. The mechanisms that States choose to include in their compliance plans – including increased use of renewable generation, if States choose that approach – will be inputs into those planning processes.

5. The Clean Power Plan would facilitate the rapid expansion of renewable resources, particularly rooftop solar underwritten by long-term leases.

a. Has EPA requested, and has FERC conducted, an analysis of the potential reliability impacts associated with a rapid rise in the use of variable generating sources?

Answer: No.

b. Do you believe that rapid changes in the use of variable generation sources could pose challenges to electric reliability on a local or national basis?

Answer: While I do not believe that the growth of variable resources, in and of itself, will pose challenges to electric reliability, as I frequently observe, increased reliance on variable resources may require the development of new transmission infrastructure and adaptation to markets.

6. The Clean Power Plan contemplates significant increase in energy efficiency and demand-side management. How would the increased role of energy efficiency and demand-side resources impact wholesale energy markets? Reliability? Can FERC regulate such resources, particularly given the recent court ruling vacating FERC's Order No. 745?

Answer: Increased energy efficiency and use of demand-side resources would alter the balance of supply and demand in wholesale energy markets. Historically, the organized wholesale electricity markets have been able to reliably integrate these resources into their operations and system planning. For example, during recent extreme weather events like the Polar Vortex and excessive heat of September 2013, PJM activated over 2500 megawatts of demand response and over 6600 megawatts of emergency demand response, respectively, to maintain reliability. During the Polar Vortex in particular, PJM has reported that over 90 percent of the demand response resources it called responded, despite the fact that those resources have no obligation to respond during the winter months.

The Commission's jurisdiction over demand response resources in wholesale energy markets is still at issue before the United States Court of Appeals for the District of Columbia Circuit. On

July 7, 2014, the Commission sought rehearing *en banc* of the court's determinations regarding FERC jurisdiction over demand response resources in wholesale energy markets in *Electric Power Supply Association et al. v. FERC*, the decision vacating Order No. 745. FERC's petition for rehearing *en banc* is pending before the court.