

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426



*Office of Commissioner Philip D. Moeller*

December 1, 2014

The Honorable Gina McCarthy, Administrator  
United States Environmental Protection Agency  
1200 Pennsylvania Avenue NW  
Washington, DC 20460

Re: Docket ID No. EPA-HQ-OAR-2013-0602

Dear Administrator McCarthy:

I write to express my comments on the “Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units” (“Clean Power Plan” or “CPP”) proposed rule that was published in the Federal Register on June 18, 2014. I am serving my second term as a Commissioner on the Federal Energy Regulatory Commission, a position I have held since 2006.

On its own, and with competitive market forces, America is already producing many fewer greenhouse gases. And the trend is only improving. According to the EPA, “[g]reenhouse gas emissions in 2012 were 10 percent below 2005 levels.” <http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html#data> EPA's proposed rule will dramatically interfere with America's competitive market forces, perhaps resulting in even more greenhouse gases in the future.

In July, I testified before the United States Congress on EPA's proposed rule. In my testimony (attached), I express concerns about the reliability implications of the four compliance building blocks and my concern that state implementation plans will be extremely inefficient in a system of interstate regional electric markets. Other concerns relate to the front loaded timeline that as proposed will

require the bulk of system changes by 2020. Another fundamental problem is that the CPP seems to assume that a significant amount of new natural gas pipelines needed to fuel power plants, along with a similarly significant expansion of the nation's electric transmission system will suddenly appear so as to meet the new demands under the CPP. Such an assumption ignores the very real challenges we currently have in expanding these categories of energy infrastructure.

Since July, my concerns have only increased based on comments from a wide range of stakeholders. Especially persuasive are comments from the regional grid operators including RTOs and ISOs, and from individual states that foresee immense challenges in complying with the proposed rule.

I am concerned that the costs of the CPP could total hundreds of billions of dollars. But my primary concern relates to implications of the CPP on the reliability of the nation's electricity system. I continue to call for a more formal and transparent process involving FERC (and not just its staff) to examine these reliability implications. The laws of physics will trump any paper regulations or laws. There is a need to involve electric engineering expertise for an open dialogue and debate over what changes to the grid and energy network are feasible and cost-effective in a reasonable time frame.

I appreciate the outreach that EPA officials have undertaken with our state colleagues through the National Association of Regulatory Utility Commissioners. Again, a more formal process with FERC and others as described in my testimony will help promote a CPP that does no harm to the reliability of the electric system in a more cost-effective manner.

Thank you for your thorough consideration of my comments.

Sincerely,

Philip D. Moeller

## **Summary of FERC Commissioner Philip D. Moeller**

### **July 29, 2014 Hearing on EPA and FERC Reliability Challenges**

FERC has a responsibility to promote the reliability of our nation's bulk power system under section 215 of the Federal Power Act. Therefore, the Commission must analyze the reliability impacts of the proposed rules.

And because FERC is the economic regulator of the nation's wholesale electricity markets and is directed by statute to assure just and reasonable rates, the Commission also has a duty to analyze the economic consequences of the proposal.

FERC and EPA need to bring our nation's reliability engineers together in a public and transparent forum to address questions and develop answers. Just as the Commission does not have expertise in regulating air emissions, I would not expect the EPA to have expertise on the intricacies of electric markets and the reliability implications of transforming the electric generation sector. Any such process must be open and transparent, and cannot be merely a private and paperless discussion between FERC and EPA employees.

The biggest challenge in implementing the proposed rule is that electricity markets are interstate in nature. Thus the proposal's state-by-state approach results in an enforcement regime that would be awkward at best, and potentially very inefficient and expensive.

Most concerning is the assumption of increased "re-dispatch" of natural gas units of up to 70 percent. Related to this concern is whether there will be sufficient pipeline capacity to support this increase in natural gas generation. Simply put, if plant owners don't know on a daily basis whether and to what extent their power plants will be called upon to run or not, they will be reluctant to sign a 20-year or 30-year contract to buy natural gas. Yet pipelines rely on such long-term contracts to finance system expansion. And while EPA's proposal does not require infrastructure to be installed overnight, such improvements sometimes cannot be implemented within the deadlines of specific rules.

Based on the timelines involved, EPA is essentially capping the amount of national electricity consumption in 2030. Although the relationship between economic growth and electricity consumption growth has evolved over the past several decades, it is impossible to accurately predict this relationship out to 2030, just as it would be impossible to accurately predict the Dow Jones Industrial Average in 2030.

The laws of physics trump written words. Although a specific generating plant may not contribute significant power to the grid, its other outputs such as voltage support or "inertia" qualities may contribute significantly to grid stability. Moreover, the details of how reserve margins are calculated can have a significant impact on the ability of excess capacity in one load pocket to transfer power to another load pocket that needs capacity.

Independent of the EPA's proposal, a huge opportunity for improving the nation's air arises in the context of the prices we pay for electricity, as modernizing pricing policies has enormous potential to improve the environmental quality of the nation's generation sector.

**Written Testimony of FERC  
Commissioner Philip D. Moeller**

**Before the  
Committee on Energy and Commerce  
Subcommittee on Energy and Power  
United States House of Representatives**

**Hearing on  
FERC Perspective: Questions Concerning EPA's Proposed Clean Power Plan  
and other Grid Reliability Challenges**

**July 29, 2014**

Chairman Whitfield, Ranking Member Rush, and members of the Committee, I am Phil Moeller, and I have been a member of the Federal Energy Regulatory Commission since 2006. Thank you for your ongoing oversight and for providing us the opportunity to discuss our responsibilities as members of the Commission.

In our testimony today, you asked us to specifically focus on the reliability implications of the Environmental Protection Agency's (EPA) proposed Clean Power Plan and other grid reliability challenges.

Although there is an ongoing debate about whether the EPA's proposal will withstand legal challenges, I will leave that discussion to others. Instead, I will focus on the reliability implications of the proposal, the workability of the proposal, unintended consequences of the proposal, and recommendations for additional actions.

If it isn't already obvious, the title of the proposed rule, the Clean Power Plan, makes it clear that EPA is creating national electricity policy. EPA's proposal sets emission standards on a state-by-state basis with initial compliance levels mandated in

2020, ongoing to 2030. The Commission has a responsibility to promote the reliability of our nation's bulk power system under section 215 of the Federal Power Act. Therefore, the Commission must analyze the reliability impacts of the proposed rules. And because the Commission is the economic regulator of the nation's wholesale electricity markets and is directed by statute to assure just and reasonable rates, the Commission also has a duty to analyze the economic consequences of the proposal.

The biggest challenge in implementing the proposed rule is that electricity markets are interstate in nature. Thus the proposal's state-by-state approach results in an enforcement regime that would be awkward at best, and potentially very inefficient and expensive. The interstate nature of these markets is illustrated by the example of Idaho. While that state currently does not generate electricity from coal plants within its borders, it consumes coal-generated energy produced in at least five other states. If those states decrease their coal generation and Idaho compensates by increasing generation from its existing natural gas plants, it creates complications related to its initial carbon baseline and its carbon baseline going forward.

The proposal allows for states to comply through four compliance "building blocks": 1) "Heat Rate Improvements" averaging six percent for coal generation units; 2) "Re-dispatch" of natural gas generation units of up to 70 percent; 3) "Low- and Zero-Carbon Generation" intended to encourage renewable generation and encourage the continued operation of nuclear units that are economically challenged, and 4) "Demand-Side Efficiency" intended to decrease demand and improve energy efficiency.

The effectiveness of these building blocks will undoubtedly be addressed in many of the comments submitted on the proposed rule. From what I have heard, these comments are likely to opine on whether the six percent goal for heat rate is achievable, whether the proposal to save nuclear units will be counter-productive and lead to more nuclear unit closures, and whether the demand side efficiency goals are cost-effective and achievable.

Most concerning to me, however, is the assumption of increased “Re-dispatch” of natural gas units of up to 70 percent. For decades we have relied on the concept of “economic dispatch” of electric generation. Simply put, the power plants with the lowest operating cost are called first to generate electricity --- with various reliability requirements and other factors as part of the decision, depending on the structure of various markets. By moving to what is essentially “environmental dispatch,” units will be called to generate primarily based upon the emission profile of the unit. This can be reconciled with economic dispatch if a hypothetical carbon fee is added to each generator’s costs to reflect its emissions profile, forcing the costs of greater emitting generation higher in the merit order of dispatch. In addition to the higher costs involved, I look forward to reading public comments on the reliability implications of moving to this higher level of natural gas generation.

Related to this concern is whether there will be sufficient pipeline capacity to support this increase in natural gas generation. Pipelines have traditionally been financed with long-term contracts--often 20 or 30 years in length--between natural gas distribution

companies and the natural gas pipelines. However, the fastest growing set of customers for pipelines are now natural gas generation units, often in “organized” wholesale markets with day-ahead and real time energy markets that require power plant owners to bid into these markets (as opposed to baseload plants in vertically integrated markets).

New England illustrates the new challenge with expanding pipeline infrastructure. Despite widespread (although not universal) recognition that New England needs additional pipeline capacity, the fundamental challenge has been how to finance this expansion when generators are reluctant to sign long-term contracts. Simply put, if plant owners don’t know on a daily basis whether and to what extent their power plants will be called upon to run or not, they will be reluctant to sign a 20-year or 30-year contract to buy natural gas.

My concern is that this challenge of financing adequate pipeline infrastructure in New England will be replicated in other markets because of the proposal’s increased reliance on natural gas generation. This may not be an insurmountable challenge, but we haven’t yet found solutions to the New England situation and it is a topic that needs additional and substantial attention.

I find another aspect of the proposal troubling. Based on the timelines involved, EPA is essentially capping the amount of national electricity consumption in 2030. Although the relationship between economic growth and electricity consumption growth has evolved over the past several decades, it is impossible to accurately predict this relationship out to 2030, just as it would be impossible to accurately predict the Dow

Jones Industrial Average in 2030. For the past several years the nation has seen unprecedented stability in electricity demand, with some areas experiencing slow, flat or even declining demand in electricity consumption.

Last year saw an increase in electricity consumption in both the residential and commercial sectors. Industrial demand, however, fell. Yet with the real possibility of long-term low-to-moderate prices of natural gas (thanks to increased domestic production), I hope our nation is poised for an industrial and manufacturing renaissance. If this does in fact take place, we could see significant increases in industrial consumption of electricity. The nation must be careful not to impede this economic growth due to consumption targets that are essentially imposed by the EPA's proposal. I have been a long-standing supporter of increased energy efficiency and rationally-compensated demand response, but essentially capping electricity consumption may have unintended consequences, including limiting economic opportunity for many Americans.

From a fairness perspective, I know it is discouraging for some states to have undertaken aggressive measures to improve the air quality of their in-state generation, and then not to receive credit for these early adopter actions. For example, I understand that over the past decade a Wisconsin utility has invested—and ratepayers are paying for these investments through their rates---billions of dollars in cleaner technologies that have resulted in dramatic improvements to the emission profile of the utility's generation fleet. Similarly, a billion dollars was recently spent on scrubbers for a single site in Mississippi. Yet those investments are taken for granted in the EPA's plan, and may

result in consumers paying for utility investments that will not be used. Wisconsin and Mississippi are not alone here, as other states have invested heavily in reducing air emissions over the past few years.

Going forward and at a minimum, I will reiterate my request for a formal role for the Commission with the EPA as it relates especially to the reliability implications of the proposal. Convening the appropriate reliability experts (including the Commission, and possibly the North American Electric Reliability Corporation, electric wholesale market operators, power generators, electricity consumers, along with input from the states) to examine the reliability implications is necessary to avoid additional unintended consequences. Although the EPA's proposal mentions the concept of reliability more than a hundred times, it's the details of calculating proper reserve margins and specific load pockets that matter from a reliability perspective.

As we have seen with the implementation of EPA's mercury rule (MATS), load pockets matter because the laws of physics trump written words. Although a specific generating plant may not contribute significant power to the grid, its other outputs such as voltage support or "inertia" qualities may contribute significantly to grid stability. Moreover, the details of how reserve margins are calculated can have a significant impact on the ability of excess capacity in one load pocket to transfer power to another load pocket that is short. These challenges can be addressed, but it takes engineering expertise, especially when designing optimal infrastructure improvements. And while

EPA's proposal does not require infrastructure to be installed overnight, such improvement sometimes cannot be implemented within the deadlines of specific rules.

My point is that getting the electricity reliability experts together in a public and transparent forum to address these questions and develop answers is the responsible approach. Engineers can debate and disagree on details, but presently there is no public forum for this discussion to occur. Just as the Commission does not have expertise in regulating air emissions, I would not expect the EPA to have expertise on the intricacies of electric markets and the reliability implications of transforming the electric generation sector. Hence I reiterate my call for a forum to publicly discuss the extent of reliability challenges under the proposal and potential solutions to these challenges. The EPA's plan is not the Commission's rule but rather proposed by the EPA, so the responsibility to formally address the reliability implications should be promoted by the EPA with extensive Commission involvement. Any such process must be open and transparent, and cannot be merely a private and paperless discussion between government employees.

Independent of the EPA's proposal, a huge opportunity for improving the nation's air arises in the context of the prices we pay for electricity, as modernizing pricing policies has enormous potential to improve the efficiency of the nation's generation sector. Under the leadership of Acting Chair LaFleur, the Commission has begun an overdue and extensive project to examine ways to improve price formation at the wholesale level. Flaws in existing price formation were greatly exposed during last winter's Polar Vortex events. More accurate pricing will lead to a more efficient

wholesale market and will serve as a more rational approach toward balancing the supply and demand of electricity.

In this policy realm, I also urge our colleagues on state commissions to accelerate their consideration of implementing real time pricing at the retail level. Presently, most residential consumers (and many other consumers) do not see the real-time cost of the electricity they consume. In reality, that means they are consuming too much electricity when it is the most expensive instead of shifting that consumption to periods when electricity is the least expensive. But with existing flat-rate pricing, consumers have no incentive to practice “load shifting”. Real time pricing provides better consumption signals to consumers, and can greatly improve air quality by reducing peak demand (which is usually in the summer when air quality is most threatened). I realize that extensive consumer education and effective societal “safety nets” will be needed before markets transition to real-time pricing. But I also trust that with effective consumer protection mechanisms, citizens will make rational choices based on real economics and a more efficient and cleaner generation profile will result.

Regardless of the ultimate outcome of EPA’s proposal, significant actions can be taken in the meantime to improve the nation’s air emissions in the electricity sector. Overall, market forces—especially lower natural gas prices—have gradually contributed to the transformation of a cleaner electric generation fleet as some coal units have been replaced by natural gas units. The EPA’s Mercury and Air Toxics Standards Rule (MATS) has contributed to this trend, although at a faster pace than I would have

preferred. I remain very concerned about the reliability implications of MATS, especially in the Midwest during the summer of 2016. Adding new carbon dioxide compliance obligations on top of MATS creates a complex regulatory environment, the implications of which are not yet understood. Yet this topic is important and needs to be addressed promptly, as reliability is as much a necessity for the EPA as it is for the American people.

Thank you for the opportunity to express my views, and I look forward to any questions you may have for me.