UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Technical Conference on Environmental Regulations and Electric Reliability, Wholesale Electricity Markets, and Energy Infrastructure	)	**Docket No. AD15-4-00**

WRITTEN STATEMENTS AND COMMENTS OF JOEL BLADOW ON BEHALF OF TRI-STATE GENERATION AND TRANSMISSION ASSOCIATION, INC.

Tri-State Generation and Transmission Association, Inc. (Tri-State) appreciates the opportunity to participate and provide comments to the *Technical Conference on Environmental Regulations and Electric Reliability, Wholesale Electricity Markets, and Energy infrastructure*. Our comments below highlight Tri-State's concerns with the proposed Clean Power Plan (CPP) and how it will significantly impact our ability to reliably and affordably provide power to our Members. We have also summarized our official comments that were shared with the Environmental Protection Agency (EPA) during the public comment period for the rule.

The impacts from the CPP, if implemented as proposed, are staggering and will have a significant impact on the reliability and affordability of electricity for Tri-State and our Member Owners. The time and investment needed to comply with the rule is vastly underestimated by the EPA and if not addressed will jeopardize the reliability of the power system and needlessly raise rates across the nation. Among other issues, Tri-State strongly believes the following (which are discussed in more detail on page 5) must be addressed –at a minimum– in the final version of the plan to safeguard reliability and affordability:

- **Revised Timing** - Remove the interim goals and timeframe. There is a strong argument that 2030 timeframe is also unrealistic.
- **Regional Nature of the System** - The rule does not adequately account for or address the regional nature of the Western Interconnection and utilities that serve multiple states.
- **Lack of Flexibility** - The plan does not provide the needed flexibility to address emergency and operational realities of the complex networks it will significantly impact.

It is critical that the Federal Energy Regulatory Commission (FERC) engage with the EPA to address the significant flaws and erroneous assumptions as they pertain to reliability within the CPP.

1. OVERVIEW OF TRI-STATE

Tri-State is a not for profit wholesale electric power supplier owned by the 44 rural electric cooperatives that it serves. Tri-State generates and transmits electricity to its member distribution systems, which collectively have a 200,000 square-mile service territory across Colorado, Nebraska, New Mexico and Wyoming, and serve approximately 1.5 million member owners. In addition, Tri-State also has a key coal fueled generation asset in eastern Arizona, which primarily serves load in New Mexico and Colorado.

Tri-State's member systems serve a wide array of customers and demographics; from areas experiencing significant oil and gas development to high production agricultural lands to some of the poorest and most rural communities in America. In general, Tri-State's Members serve low density areas, which average less than 5 customers per mile (compared to over 35 customers per mile for investor-owned and

municipal utilities). In order to reach its members and deliver reliable electricity, Tri-State has developed an extensive transmission system that spans multiple states and includes over 5,300 miles of transmission lines– much of which is located in remote and rural areas.

Driven by member growth and a need to maintain reliability, Tri-State has invested heavily in generation and transmission infrastructure over the past few decades. Looking forward, it is projected that significant capital expenidtures will continue to be dedicated to expanding, upgrading and maintaining the system.

Tri-State's system is primarily located in the area served by the Western Interconnection and coordinated with numerous other generation and transmission owners and operators in the region to ensure the system is efficient and reliable. Tri-State's system is designed to utilize different types and sizes of generation located strategically throughout its territory. When connected to its expansive transmission system, it allows Tri-State to reliably and efficiently match electrical supply and load, manage load flows, support voltage, and ensure system stability.

2. SPECIFIC CONCERNS RELATED TO RELIABILTY, INFRASTRUCTURE AND WHOLESALE ENERGY MARKETS

Tri-State provides the following specific comments on the impacts of the proposed CPP in regards to reliability, infrastructure needs and wholesale markets and trading. In general, all three topics covered by this conference are strongly interrelated, but without adequate infrastructure, reliability will suffer and wholesale markets cannot function to keep costs affordable.

The EPA proposal suggests the use of four building blocks to meet the reduction in carbon dioxide emissions required by the CPP. It has become apparent from the comments and subsequent analysis that that while all of the building blocks have issues, Building Blocks 1 and 4 are seriously flawed, based on inaccurate assumptions and will do little to meet the EPA reduction goals. This will force states and utilities to rely solely on Building Blocks 2 and 3 to meet state goals, which will require increased use of existing gas fired generating units and non-carbon emitting generation to replace the reductions from other sources, respectively. Analysis has also determined that increasing the run time of the existing gas fired generation is not feasible in many cases, especially in light of the EPA's proposed Ozone Rule.

Based on our initial analysis, Tri-State believes the outcome of the CPP will very likely lead to:

- **Shutting down or restricting generation used to meet load, support voltage, and maintain frequency.**

  Tri-state's generation infrastructure has a significant role in maintaining reliability and there are potential issues and infrastructure investment needs resulting from the anticipated retirement or curtailment of generation under the proposed CPP. In Tri-State's system, certain generating facilities are vital to maintaining reliability, regulating voltage and frequency, and serving load. In some cases, significant upgrades to the system will need to be completed before a generating unit could be retired. Tri-State is certainly not unique in this regard, as many generating assets are in key locations in the system in relation to load centers and transmission system capability.

  Tri-State significantly relies on other utilities' transmission systems, so a retirement of a generating unit by another utility will also impact Tri-State's ability to serve our load. The interconnected nature of the transmission system provides significant benefits to all involved, but decisions by other generation owners will impact all system users.

- **Modifying power flows on the transmission system to accommodate re-dispatching of less carbon intensive generation.**

  Since a significant amount of existing generation will be shut down as a result of the CPP, there will be a change in the power flows and trading patterns on the system. It is unclear what the changes will be, but it is unreasonable to assume status quo in terms of transmission capabilities between regions in the West when the transfer limits are often higher due to the support of generators that will be closed. The power must come from new generators added to the system and their location will be determined by many factors. Constrained transmission paths on the existing system will have to be re-evaluated and re-rated based on the new system configuration. This problem will be exasperated by the potential shift to state-based compliance programs which will create significant market disruption and new seams issues where none exist today. In fact, given the EPA's short timeframes, it seems to preclude any type of multi-state arrangements and assure a shift to state based low carbon dispatch patterns.

- **Installation of new low- to zero-carbon generation.**

  Building Block 3, the addition of new renewable generation, is one concept the industry has significant experience executing and could provide reductions in the carbon intensity of generation as the EPA desires. However, replacing dispatchable base-load generation with the associated system voltage and frequency support with intermittent renewable generation must be done carefully and in a measured fashion. Tri-State has added significant wind, solar, and hydro resources to our system over the past decade, including large utility scale plants and significant distributed generation through our Member Systems. One of the challenges Tri-State has faced in recent years is finding suitable locations where new power sources can be interconnected to the transmission system and distributed to load. The best locations for new facilities are typically in rural areas where there is limited available transmission capacity to transmit the power across the system. The short to medium length radial lines that connect a new wind or solar project to the system are typically straight forward and have local support due to the benefits the project brings to the community. However, significant additional transmission is required to effectively integrate the large amounts of low carbon generation required to make the EPA plan a reality. The additional transmission will consist of lines that are longer, cross multiple jurisdictions, and will take longer to develop, permit, and build.

- **The construction of significant transmission to integrate the new generation and prevent the degradation of system reliability**

  Tri-State has experienced firsthand that the process to plan, route, permit, and obtain land rights for new transmission lines -- as well as upgrades or rebuilding existing facilities -- can take many years. In some cases, approvals can't be secured despite years of effort and investment. Siting and permitting transmission is a complex and potentially controversial process that requires a large number of permits, consultations, and approvals from multiple federal, state, and local government bodies and private parties before construction even begins. The timeline for a transmission project depends on completion of planning studies and technical analysis, real estate availability (negotiating rights-of-way or exercising eminent domain authority), procurement of long lead time equipment, environmental permitting requirements, public involvement, regulatory approval, and opportunities for equipment outages to interconnect the new facilities. A relatively simple project that will not traverse an environmentally sensitive area, require the exercise of eminent domain, or involve significant public opposition will take up to three years prior to construction. More complicated projects that will traverse federal lands, environmentally sensitive areas, or will generate public opposition may require 10 years or more to complete. In some cases, utilities have been forced to completely abandon projects, including Tri-State's abandonment of the San Luis Valley-Calumet-Comanche project that is discussed below.

Tri-State's 200,000 square mile service territory overlays federal, state, tribal, and private lands and any transmission projects are subject to regulatory approvals from the various entities involved before construction can proceed. Challenges resulting from the approval process required by any of these stakeholders can delay or ultimately prohibit construction of a transmission project. These approval processes are unpredictable. At the federal level, implementation of the National Environmental Policy Act can present delays for environmental impact review, as can new species and critical habitat listings under the Endangered Species Act and the creation of new national monument designations or "exclusion" areas through wilderness areas. Locating transmission facilities on tribal land can involve substantial uncertainty and high costs. Within Tri-State's service territory, state approval processes differ significantly, and in Colorado and other states, local governments have jurisdiction over siting and permitting processes on private lands.

Tri-State's recent experience with seeking authorization for transmission projects demonstrates the complex and lengthy process that can be involved for even relatively small projects. For example:

- The United Power 115 kV Transmission Improvement Project required 10 years to obtain pre-construction approval for only 15 miles of transmission line. The project consisted of three phases. In Phase II, one local jurisdiction insisted on implementing an underground configuration, requiring an appeal to the Colorado Public Utilities Commission ("CPUC") and an action in federal district court for the project to proceed. In Phase III, a dispute between two involved jurisdictions that could not agree on a buildable preferred route had to be resolved by the courts before the project could move forward. Phase III is currently under construction.

- The Nucla-Sunshine 115 kV project endured a 13-year pre-construction process. The project crossed federal lands, necessitating an environmental impact statement under the National Environmental Policy Act and three records of decision. The project also required approval from two local jurisdictions, one of which demanded utilizing underground transmission lines. Tri-State appealed to the CPUC and ultimately a settlement was reached. The line was completed 15 years after the permitting process initially commenced.

- The development process for the Colorado-New Mexico Intertie Project began in 1997 and did not end until 2006. Various New Mexico landowners refused Tri-State access to their land for the purpose of pre-construction surveys and other work. Ultimately, the New Mexico Supreme Court resolved this dispute in Tri-State's favor after years of litigation. In addition, the county permitting process in Colorado required two years. Tri-State spent another year to acquire necessary land rights, which involved a condemnation process with adversarial landowners.

- The San Luis Valley-Calumet-Comanche 230/345 kV project received a Certificate of Public Convenience and Necessity from the CPUC approving the project but had to be abandoned, as configured, due to opposition from a private landowner. The project was needed for reliability for Tri-State's operations and was a combined project with Xcel Energy, which was planning on using the line to enable the transmission of solar power out of the San Luis Valley. The owner of a large parcel of land in a location key to the project's route successfully lobbied the federal government to obtain a conservation easement on his property, which not only resulted in restrictions against construction of the transmission line, but also in the solar generation not being built because there was no way to transmit the energy. After the abandonment of the line as proposed, Tri-State began planning a line to the south into New Mexico. However, as the permitting and siting studies were underway, President Obama established the Rio Grande del Norte

National Monument, which for all practical purposes eliminated the feasibility of any route to the south.

None of these projects are outliers. They reflect many of the common obstacles that must be worked through to obtain approval for transmission projects, particularly in areas of the West in close proximity to federal and tribal lands. It is unreasonable for EPA to simply assume that the transmission and pipeline infrastructure necessary to implement the plan can be developed in a more expeditious timeframe.

- **Significant cost impacts as a result of stranded generation, and at times transmission, assets will make it difficult to keep electricity affordable.**

  As is the case with many utilities, Tri-State has a number of generators that have significant service life remaining and may have to be retired early if the EPA implements the CPP as proposed. It will be a significant cost for our members to pay for new generation while at the same time paying off the cost of facilities that have been closed. If existing facilities with significant useful service lives remaining must be shut down, the cost of new generating resources and transmission infrastructure to meet reliability standards many exceed the ability of people and businesses to afford electricity. In addition to the capital cost impacts, if the new infrastructure cannot be completed before the generating units are closed, additional operating costs and reliability impacts will also have to be paid for by the same people and businesses.

3. SUGGESTED INPUT FROM FERC TO THE EPA

The sheer number of changes required to meet EPA's proposed CPP will take significant time and investment to address. However, the proposed EPA rule forces all of them to be dealt with in a timeframe that is not possible if the reliability and affordability of the electric supply is to be considered. There are a number of assumptions within the CPP that the FERC should provide guidance and input to the EPA, including:

Timing and Levels – the existing timing and levels will have significant reliability and cost impacts:

It is clear that the timing for implementation and interim goals as proposed in the CPP were developed without an understanding of the processes and time actually required. Below are a few examples that emphasize a disconnection between the plan and reality:

- The time required to build or upgrade transmission is much longer than the time required to build new generation.
- In most cases, shutting down generation in one location while building new generation in another will create reliability issues unless transmission system enhancements are completed.
- There is no way for states to develop meaningful implementation plans, or to coordinate regionally in the time allocated.
- Unlike most utilities that are within one state, or have multiple subsidiaries that are each regulated within each state, Tri-State has load and/or facilities in five states. Tri-State's system is operated on a regional basis to leverage our broad footprint and load diversity to keep rates affordable to our Member Owners. To adjust to a state-focused basis as proposed in the CPP will have significant cost and reliability implications.
- The power system in the West was developed and built over more than 75 years and to expect it to be significantly changed in a few years, or even a decade is unrealistic.

Regional Nature of the system – analysis must be based on reality:

The EPA plan focuses on state goals and implementation to fundamentally restructure the generation and transmission infrastructure. This has far reaching implication as both the transmission and pipeline systems are regional in nature. Even in the West where there is one interconnection, it is in effect operated on a regional basis. The long distances between load centers in the West have made it cost prohibitive to tightly link the various sub-regions, so only limited transfers are available. FERC must engage the EPA so they are better informed on the complex interactions required to manage these large regional transmission and pipeline networks. Assumptions contained in the CPP often lump states together due to geography regardless of the actual situation each state faces. A better understanding by the EPA of how the Western Interconnect works and the physical and geographical boundaries that must be accounted for would lead to a more realistic proposal with attainable goals that can be met without jeopardizing the reliability of the system.

Adapting to Changes – the world will change and flexibility must be included in the framework:

The CPP defines hard compliance numbers based on a single year of generation data. The operation of the power system that keeps the lights on across the country is complex and always changing - not static as the EPA has assumed. Storms, equipment failures, aging infrastructure, new technologies and changes in regulations all have an impact on how the system is configured and operated. To assume a set of hard targets today without the ability to adjust during emergency or changing conditions is problematic. Electricity providers do all in their power to maintain service to consumers because the impacts to people and their communities are significant – schools close, traffic signals are out, heat and air conditioning are off, businesses close – and it impacts every aspect of our lives. When electricity is not available due to a storm or failed piece of equipment and physical delivery is impossible, major disruptions are understandable and in most cases acceptable. However, turning someone's electricity off because of a carbon limit is unacceptable. The FERC needs to work with the EPA to develop a new framework to ensure power is not shut off (or excessive costs incurred) due to the regulatory requirements as outlined in the proposed plan.

4. OVERVIEW OF CPP COMMENTS

In addition to concerns raised above, Tri-State's official comments to the EPA indicated that the CPP, as proposed, has the potential to significantly increase the need for transmission and generation infrastructure expansion to reliably serve its member load. The proposal is the most complex and wide-ranging regulation written under the Clean Air Act (CAA) and could require a major restructuring of the utility industry while disregarding the realities of how electricity is generated, transmitted and consumed.

Tri-State's analysis of the CPP indicates that the proposal would result in significant costs to its members and has identified several legal, technical, and policy-based problems with the proposal, some of which are summarized below:

No consideration of cooperative model—Tri-State and its members are not-for-profit cooperatives and its member-owners bear all costs of generation and compliance with regulations. EPA provides no path to account for cooperatives' business model or ability to recover costs. Electric cooperatives are not vertically integrated and may have a more difficult time meeting the requirements of the proposal due to the smaller size of their generation fleets and less flexibility within their operations.

EPA does not have legal authority—The EPA relies on a rarely used section – 111(d) – of the Clean Air Act as the basis to regulate CO_2 across a wide spectrum of activities, and the approach has already been challenged in court. Section 111(d) of the CAA does not give the agency the

ability to regulate CO_2 outside the fence-line of the power plant. Additionally, the proposal is unlawful because EPA's analysis of the proposal's costs and benefits is fatally flawed.

Building Blocks are flawed—even if EPA had legal authority to issue the proposal (which it does not); each of the proposal's "Building Blocks" suffers from problems that render it unlawful, or at a minimum, unworkable and unenforceable.

- ***Building Block 1***—EPA's proposed 6 percent heat rate improvement for coal generation required by Building Block 1 is unattainable for any generation unit currently in Tri-State's fleet.

- ***Building Block 2***—EPA ignores many significant barriers that will prohibit a state's natural gas combined cycle (NGCC) units from ramping up generation to an overall 70 percent capacity factor as required by Building Block 2. Tri-State has identified numerous concerns associated with this approach, including:

    - Tri-State's NGCC units are typically load following and are not designed to provide baseload power

    - The proposal would reduce fuel diversification, which is relied upon by utilities to maintain reliability

    - EPA's assumptions about the availability of pipeline and infrastructure needed to accomplish such a high capacity factor are unrealistic and the proposed timeline does not allow for the realities of permitting and constructing new infrastructure.

  EPA also improperly included Tri-State's two NGCC plants, the J.M. Shafer Generating Station and the Rifle Generating Station, in the calculation of Building Block 2 because those units are outside the scope of the proposal.

- ***Building Block 3***—EPA's assumptions in Building Block 3 regarding renewable energy are unrealistic and start from flawed premises. Renewable portfolio standards (RPS) are not typically bound by state boundaries, which is a fact that EPA ignores. EPA also fails to take into account the nuances and safety valves of each state's RPS program and how that affects the calculation of Building Block 3.

- ***Building Block 4***— EPA fails to recognize that electric cooperatives such as Tri-State have unique difficulties with regard to Building Block 4 because they are wholesale providers and cannot know whether the end-use customer has implemented any energy efficiency measures.

If EPA insists on pursuing the proposal in its current form, Tri-State made the following specific recommendations that would potentially make the proposal workable and reduce compliance costs for consumers:

- EPA should extend the timelines for state plan submission and for beginning the compliance calculation period to provide an adequate window for judicial review of any final emission guidelines before states invest significant resources to develop their plans.

- EPA should eliminate the interim goals and should allow states to demonstrate their progress toward achieving the 2030 final goal. Additionally, states should have the ability to allow off-ramps from the rule due to electric system reliability or costs.

- EPA should not rely on a single year of generation and emissions data as the baseline for calculating state goals. Data from any single year may reflect irregular operational or economic conditions, anomalous weather events, outages, malfunctions, or any number of other biases. Instead, EPA should base the emission guidelines on generation and emissions data from a multi-year period in order to incorporate a sufficiently varied range of operating conditions in the state goals.

- Any final emission guideline that is based in whole or in part on heat rate improvement measures must provide affected electric generating units with relief from New Source Review (NSR) requirements for implementing those measures.