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I. Introduction

My name is Jeff Burleson and I am Vice President of System Planning for Southern Company. I appreciate the opportunity to participate on the Infrastructure panel in this important Technical Conference. Notwithstanding the fundamental and foundational legal and technical problems with EPA's Clean Power Plan (CPP) proposal, for purposes of this Technical Conference, my comments will focus on both short term and long term infrastructure, reliability, and economic challenges and risks associated with compliance with EPA's proposed CPP.

Southern Company's public utility subsidiaries (Alabama Power Company, Georgia Power Company, Gulf Power Company, Mississippi Power Company and Southern Power Company) reliably and economically serve 4.4 million customers throughout a 120,000-square-mile territory in Alabama, Florida, Georgia and Mississippi. Southern Company owns and operates a diverse generation fleet comprising approximately 45,000 MW of generating capacity and a robust transmission system with over 27,000 miles of transmission lines. Southern Company's public utilities are vertically integrated with a closely coordinated system of generation, transmission and distribution assets. Planning processes within Southern Company and its public utility subsidiaries rely on a combination of owned capacity and competitively procured long term bilateral capacity contracts, firm physical transmission delivery service, firm fuel transportation, firm fuel supply, and natural gas storage. Resource and transmission planning processes of Southern Company's public utilities adhere to NERC planning and reliability standards with certain aspects of planning and operation regulated by state Public Service Commissions and other aspects regulated by FERC. The overall objective of these planning processes is to assure clean, safe, reliable and affordable electric service to customers. Complementary to this state and

federal regulatory oversight, Southern Company's public utilities utilize processes that place the best interest of customers at the heart of every business decision. These objectives and the careful planning, operation and close coordination of the Southern Electric System has continued to serve customers reliably and economically for many decades.

II. Executive Summary

In my statement, I am addressing details and support regarding three key issues:

1. **EPA's proposed CPP compliance timelines are not achievable, thus more time is needed at every step of the process**

   EPA's own state-by-state CPP compliance analysis illustrates the un-achievability of the proposed CPP timelines. More time is needed at every step of the process but in particular more time is needed for compliance with both the final and interim CPP emission rate targets. EPA's analysis predicts retirement of a number of coal-fired generation units by 2018 and replacement of that coal-fired generation with combined cycle natural gas generation by 2020. The proposed timelines are inadequate for development of needed infrastructure and replacement generation. The proposed timelines limit the range of feasible compliance options for both the interim and final CPP compliance targets. The proposed timeline for the interim CPP emission rate targets effectively eliminates robust consideration of regional approaches.

2. **EPA's proposed CPP will jeopardize reliability of the bulk electric system**

   EPA's proposed CPP represents a major overhaul of the electric system that will potentially put serious reliability and operational pressures on the grid. This potential impact is unlike past environmental requirements where individual plants will either install environmental controls or close. Instead, the proposed CPP intends to shift regulatory and operational control over the nation's electric system to the EPA, or to the state environmental agencies as a proxy for EPA. And it does so under the guise of "environmental compliance." There is no "reliability safety valve" that can be properly designed or implemented that could remedy the myriad of possible consequences of tampering with the electricity system in this interventionist way. Moreover, The EPA

CPP proposal would result in long term reliability challenges that extend well beyond the final 2030 emission rate targets. A continuing compliance obligation with the CPP would extend indefinitely beyond 2030. State or regional compliance plans will be based on a collection of separate actions that collectively attempt to achieve and then maintain compliance. However, unexpected events could dramatically alter a state or region's ability to remain in compliance on a continual basis and force a state or region to decide whether to maintain compliance or whether to maintain reliable electric service to customers.

3. EPA's proposed CPP will increase bundled retail rates paid by customers

EPA's own state-by-state CPP compliance analysis predicts the premature retirement of existing coal generation that would have to be replaced by natural gas-fired combined cycle capacity. Additionally, EPA predicts substantial increases in energy efficiency and in some regions also predicts substantial increases in the penetration levels of renewables. EPA's prediction of the premature retirement of existing coal capacity, the replacement of that capacity with combined cycle natural gas-fired capacity, the significant increases in energy efficiency, the significant increases in the penetration of renewables and the associated integration costs of those renewables will all result in significant upward pressure on the bundled retail rates paid by customers.

The primary way that FERC can help would be to acknowledge, unanimously, the very real concerns created by the EPA CPP proposal regarding reliability of the electric system, the absence of an effective solution available to either EPA or to FERC to address the reliability concerns, and to advocate for more time before the start of the final compliance requirement and before the start of any interim compliance requirement.

III. EPA's proposed CPP compliance timelines are not achievable, thus more time is needed at every step of the process

EPA's own compliance prediction illustrates the un-achievability of the proposed CPP. The timing of both the interim and final CPP emission rate goals is problematic, creates reliability risks and will result in suboptimal economics of compliance. The entire bulk

electric system was planned, constructed and has been operated methodically and purposefully over a very long period of time. Drastically changing the generation capacity mix or topography of the transmission system should be a very thoughtful and deliberate process implemented over a considerable period of time, not just the "turn a switch at midnight one night" with the assumption that all will be well in terms of reliability and cost of electric service. More time will clearly be needed for an orderly transition to the dramatically different electric system EPA is attempting to mandate based on its proposed CPP.

The interim and final goal timelines are both so aggressive that they effectively prevent new, currently unplanned nuclear generation from being considered as a compliance option. In reality, any serious consideration of carbon reduction must consider new nuclear, the nation's largest source of carbon free electricity. With the timeline for new currently unplanned nuclear generation on the order of 15 years from the start of licensing activity to commercial operation, EPA has eliminated new, currently unplanned nuclear generation as a compliance option. In order to assure a diverse, reliable and economic fleet of generation to serve regional and national energy needs, new nuclear generation must be a viable consideration in the future generation capacity and energy mix.

EPA's state-by-state CPP compliance analysis illustrates the un-achievability of the proposed CPP timelines. For the four states served by Southern Company's public utility subsidiaries, the interim emission rate targets require roughly 75% of the overall reductions to effectively be made by 2020. In EPA's compliance modeling of the four states served by the Southern Electric System, EPA assumed that by 2018 the Southern Electric System would retire more than 9,000 MWs of additional coal units over and above retirements already made as a result of the EPA MATS rule. These retirements would necessitate the addition of 5,400 MWs of gas combined cycle generation by 2020. Needless to say, these EPA compliance predictions are egregiously unrealistic since it would take: (i) three to seven years for any transmission upgrades to reliably accommodate retirements of this magnitude; (ii) more than five years for siting, permitting, state regulatory approval, engineering, procurement and construction of new combined cycle generation; and, (iii) more than three years to enable interstate natural gas pipeline expansion to supply firm fuel to the new generation. Yet, under the most optimistic timeline within EPA's proposed CPP, individual

state implementation plans would not have to be approved by EPA until the Fall of 2017, leaving woefully inadequate time for the needed state regulatory approvals, infrastructure development and generation resource changes.

The proposed 2020 interim goal timeline is so aggressive that it would be extremely difficult to coordinate and fully implement a regional approach across multiple states. EPA's proposed CPP allows an extension until 2018, to submit multi-state, regional implementation plans. However, EPA's proposal does not allow any additional time for the start of interim compliance for regional implementation plans on January 1, 2020. If EPA takes a year to approve any multi-state regional plans that could be submitted as late as the middle of 2018, it would be the middle of 2019 before EPA approved those plans. EPA approval of a regional plan in the middle of 2019 would leave only about six months before the interim compliance obligations would begin on January 1, 2020. Such a short compliance timeline is clearly unworkable.

In order to develop a regional approach a tremendous amount of work and coordination would be needed. Exacerbating the challenge is the fact that among individual state agencies, jurisdiction regarding environmental regulation and energy regulation is split. Any regional approach even if limited to just the Southern Electric System's four states would require coordination among four state environmental agencies, four state utility commissions, potentially four state legislatures and four state governors if state legislation is needed, numerous load serving entities, and numerous generation owners. All of these parties would need to come together in a coordinated manner to develop and then to achieve regional compliance. Another key complicating factor to a regional approach is that electric providers aren't necessarily confined to state borders. For instance, in Mississippi, there are three different electric systems, each of which is in itself part of a multi-state system: i) a portion of the Southern Electric System, ii) a portion of MISO, and iii) a portion of TVA. So, the Mississippi environmental and energy regulators would have to consider how to implement a state plan or join a regional plan given the fact that different geographic portions of their state are already part of three separate multi-state electric systems.

The CPP proposal raises a number of issues and leaves many unanswered questions regarding possible regional compliance approaches. As a result, it is difficult to have a meaningful dialogue about the development and implementation of a regional approach at

this point in time. So, not only would development and implementation of a regional approach be very challenging and time consuming, one cannot meaningfully even begin consideration of a regional approach until after the release of the final CPP guideline in the latter half of this year. Yet, the CPP proposal unrealistically starts the interim compliance requirement on January 1, 2020, regardless of whether a state-by-state approach or a regional approach is utilized. And then of course there is the question of which additional states, if any, to consider partnering with.

Based on the aforementioned timing and resulting infrastructure challenges it is self-evident that more time is needed before the start of final compliance and before the start of interim compliance in order to maintain reliable and economic electric service to customers.

IV. EPA's proposed CPP will jeopardize reliability of the bulk electric system

1. EPA must respect the historic role states have in ensuring reliability

The record developed thus far from the Commission's Technical Conference hearings is replete with concerns that the CPP, if implemented, could place serious reliability and operational pressure on the electric system. This potential impact is unlike past environmental requirements. The CPP is not strictly speaking an emissions control program -- where individual plants will either install controls or close. The CPP intends to shift regulatory and operational control over the nation's electric system to the EPA, or to the state environmental agencies as a proxy for EPA. The CPP targets fundamental elements of the electricity industry -- including system dispatch, power plant operations, generation technologies and overall consumer demand for electricity. And it does so under the guise of "environmental compliance." There is no "reliability safety valve" that can be properly designed or implemented that could remedy the myriad of possible consequences of tampering with the electricity system in this interventionist way.

Rather than an after the fact and artificial safety valve triggered upon implementation, EPA must recognize and not seek to interfere in the states' historic power to adopt mechanisms to ensure that any compliance with the CCP will not impact the safe and reliable operations of a state's electric system. I am not a lawyer but I understand that the Clean Air Act was not written or intended to interfere with the powers that states possess to ensure

reliable and affordable electric service. EPA should respect these fundamental principles in any rulemaking.

2. Calls for a safety valve are an admission that EPA's CPP will likely cause system reliability risk

As made clear by these comments, as well as the statements of other stakeholders, EPA's proposed CPP represents a major overhaul of the electric system that will potentially put serious reliability and operational pressures on the grid. This should be of tremendous concern to the Commission. As the reliability alarm bell grows louder and louder, many have responded by suggesting a number of proposals to incorporate a so-called "reliability safety valve" into the proposed CPP. But in many ways, the call for a reliability safety valve is an admission that the proposed CPP will in fact cause seriously reliability problems and, as proposed, is seriously flawed. No after the fact "safety valve" can cure the proposed CPP's numerous legal, technical, and operational infirmities, especially if it is a "safety valve" that is only designed to be triggered after the rule is finalized and implemented.

As laid out in Southern Company's detailed comments to EPA, these concerns are fundamental to the proposed CPP's flawed structure. The "building block" approach employed by EPA in the proposed CPP, derived from an "outside the fence-line" analysis, is contrary to plain language and intent of the Clean Air Act. It essentially compels States to restructure their generation portfolio in ways that necessarily affects the reliability and operational integrity of the electric system. While claiming authority for the proposed CPP from CAA section 111(d), EPA presumes certain legal authorities not in statute, while ignoring specific provisions that would otherwise recognize the reliability protections now sought by public and private stakeholders throughout the electricity sector. In doing so, the proposed CPP would be an attempt to ignore and even usurp the traditional police powers of the states to manage their electricity systems.

So I leave the Commission with this: if Congress had meant for EPA, and not FERC or the State Commissions, to fundamentally restructure the nation's electricity industry, and then to oversee the reliability and operation of the grid, that authority would have been clearly granted to EPA in the CAA. Yet not even EPA claims such language exists. The reliability safety net proposals simply side step this fundamental flaw in EPA's approach and

should be recognized for what they are – an admission that EPA is overstepping its authority and intruding on the states' historical public utility stewardship of delivering electricity safely and efficiently to consumers.

3. EPA's proposed CPP would result in dramatic and long lasting reliability impacts

The sudden and unprecedentedly large amount of capacity that EPA assumes would be retired in order to comply with the CPP proposal would eliminate many of the very baseload units that have been long-needed, and will continue to be needed, to maintain voltage, inertia, spinning reserves, etc. to maintain the reliability of the nation's bulk electric system.

The EPA CPP proposal would result in long term reliability challenges that extend well beyond the final 2030 emission rate targets. Compliance with the proposal does not end in 2030. Instead, a continuing compliance obligation with the CPP would extend indefinitely beyond 2030. State or regional compliance plans will be based on a collection of separate actions that collectively attempt to achieve and then maintain compliance. However, unexpected events could dramatically alter a state or region's ability to remain in compliance on a continual basis. As an example, the sudden, unexpected long term loss of a nuclear unit that was assumed to be in operation as a part of a compliance plan would almost certainly cause the state or region to be out of compliance for an extended period of time if it is to maintain reliable electric service to customers. Other similar sudden, unexpected events could also result in similar extended periods necessitating the decision of whether to stay in compliance with the proposed CPP or whether to maintain reliable electric service to customers. Examples of events that could result in extended periods of conflict between compliance and reliability are unavailability of adequate fuel supplies, extended periods of extreme temperatures that drive up energy use by customers, significantly stronger economic and load growth than anticipated in compliance plans, etc. All of these types of sudden, unexpected and unplanned events could result in extended periods where a choice may have to be made between compliance or reliable electric service to customers.

V. EPA's proposed CPP will increase bundled retail rates paid by customers

As stated earlier, EPA's own state-by-state compliance analysis predicts Southern would retire more than 9,000 MWs of capacity, over and above the capacity that was retired due to the EPA Mercury and Air Toxics Standard. This capacity that EPA assumes would be retired still has a great deal of undepreciated book value and would otherwise have many years of remaining useful life to reliably and economically provide electric service to customers. In fact, EPA's analysis assumes Southern would retire units on which Southern is now completing costly environmental upgrades to comply with prior EPA environmental rules. As an example, Southern is in the process of completing construction of additional environmental controls costing $600 million on one of the plants that EPA's analysis assumes will be retired by 2016. The proposed CPP would strand large investments that have been made, and are continuing to be made, in many of the more efficient coal-fired generating units that remain in the coal fleet. In addition to stranding the investment in the more efficient coal-fired generating units, EPA's analysis assumes that substantial additions of new combined cycle natural gas-fired capacity will be made, resulting in increased costs to customers for recovery of the additional capital investments.

The prediction in EPA's analysis of significant increases in programmatic energy efficiency will also result in increased upward pressure on bundled retail rates paid by customers. This upward pressure would result from program administration costs and any needed rebate payments to encourage customers to implement energy efficiency measures that are often already cost effective for implementation by the customer today. Additionally, at the extreme levels of energy efficiency predicted by EPA, significant reductions in kWh sales would occur, leaving fewer kWhs over which to spread the fixed costs of the transmission and distribution systems. The extreme levels of energy efficiency predicted by EPA and the associated significant reduction in kWh sales over which fixed costs can be spread will also put substantial upward pressure on the retail bundled rate per kWh that customers pay.

The CPP proposal would result in higher levels of renewable penetration than would otherwise occur as a result of economic additions of various resource options. Any time a resource is added to satisfy a non-economic constraint such as compliance with the proposed CPP, costs will be higher than would otherwise be the case. Another key renewable cost consideration is the cost to integrate and backup the significant increase in intermittent

renewables that may be required to comply with the proposed CPP. Since EPA has limited the available compliance options through the aggressive interim and final compliance dates, renewables may be called upon to play a significant role in compliance. If so, it must be recognized that every electric system in the U.S. has a different make up of resource types, load shape, etc. Some resources provide greater flexibility to respond to intermittent renewables while others do not. And, virtually every electric system in the U.S. has a different make-up of more flexible and less flexible resources. Integration of large amounts of renewables into each individual system will present its own unique challenges necessitating infrastructure and resources such as flexible, fast ramp capacity, backup capacity, transmission infrastructure, energy storage, etc. Total compliance costs, and bundled retail electric rates will not only include the cost of the new renewables but will also include the cost of backing up and integrating those intermittent renewables into the electric system while maintaining reliability.

VI. Summary

EPA's own analysis illustrates the un-achievability of the proposed CPP compliance timelines. It is clear that the CPP proposal, if implemented, could place serious reliability and operational pressure on the electric system and would lead to substantial cost and rate increases that would result in significant economic harm to customers. The proposed CPP timelines, both interim and final, are too aggressive and do not allow enough time for infrastructure and resource development, jeopardize reliability, limit the types of resources that can be used for compliance, and don't provide enough time for a regional approach. EPA's CPP compliance predictions would result in significant stranded costs of both power plants and recently installed environmental controls. EPA predicts extreme levels of programmatic energy efficiency that will result in significant upward pressure on electric rates. The potential for CPP to cause an over-reliance on renewables for compliance would result in significant costs for the renewable generation as well as the integration costs and backup capacity costs that would have to be borne by customers. The primary way that FERC can help would be to acknowledge, unanimously, the very real concerns created by the EPA CPP proposal regarding reliability of the electric system, the absence of an effective solution available to either EPA or to FERC to address the reliability

concerns, and to advocate for more time before the start of the final compliance requirement and before the start of any interim compliance requirement.