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Recent Studies Show EPA Air Rules Do Not Threaten Electric Reliability

Committee on Energy and Commerce, Democratic Staff

In November 2011, the North American Electric Reliability Corporation (NERC) and M.J. Bradley and Associates each released updated studies evaluating the effects of existing and upcoming EPA regulations to control pollution from power plants.[1] These assessments are still based in large part on proposed, rather than final rules. Nevertheless, they provide substantial assurance that the nation can achieve significant air quality improvements from cleaning up old polluting power plants without threatening the reliability of electricity supplies.

The NERC analysis shows that EPA Clean Air Act regulations will not threaten the reliability of the electric power system.

Republican members of Congress and industry lobbyists have attacked EPA's proposed Mercury and Air Toxics Rule and EPA's final Cross-State Air Pollution Rule on the grounds that they would cause massive retirements of coal-burning power plants and threaten the reliability of the electric power system. When Thomas Fanning, President of Southern Company, testified before the Energy and Power Subcommittee in April 2011, he asserted that these rules could result in the retirement of between 70 and 80 gigawatts (GW) of generation capacity.[2]

The NERC analysis shows that estimates such as these are wildly overstated. NERC found that the Mercury and Air Toxics Rule would cause the retirement or derating (capacity reduction) by 2015 of only 9 GW of electrical generating capacity under the "moderate" case assumptions.[3] This is less than 1% of the current generating capacity in the United States. Even under the "strict" case assumptions, the projected capacity losses totaled less than 12 GW.[4] No further retirements were projected by 2018 under either scenario.[5]

In addition, NERC examined the impact of the Cross-State Air Pollution Rule on electrical generating capacity. NERC found the rule would drive no additional retirements under the moderate case and less than 5 GW in retirements under the strict case.[6] These levels of retirement are even smaller than those projected for the Mercury and Air Toxics Rule.

NERC's projected retirements are similar to those of EPA. EPA estimated that less than 10 GW of coal-fired capacity would retire by 2015 as a result of the Mercury and Air Toxics Rule and that less than 5

[1] North American Electric Reliability Corporation, *2011 Long-term Reliability Assessment* (Nov. 2011); M.J. Bradley & Associates, Analysis Group, *Ensuring a Clean Modern Electric Generating Fleet while Maintaining Electric System Reliability (Fall 2011 Update)* (Nov. 2011).
[2] Subcommittee on Energy and Power, Committee on Energy and Commerce, Hearing on the American Energy Initiative (Apr. 15, 2011).
[3] North American Electric Reliability Corporation, *2011 Long-term Reliability Assessment* (Nov. 2011) 173.
[4] *Id.* at 174
[5] *Id.* at 175-176.
[6] *Id.* at 173-176.

GW of coal-fired capacity would be uneconomic to maintain as a result of the Cross-State Air Pollution Rule.[7]

The level of retirements modeled by NERC also can be compared to the level of excess generating capacity in the United States. NERC projects that nationwide, the United States will have over 145 GW of excess generating capacity above target reserve margins in 2014.[8] Even under the strict case, the retirements projected as a result of the Clean Air Act regulations would reduce this excess capacity by less than 12%. NERC identified two areas of the country where it projects anticipated reserve margins in 2015 that are somewhat below the target levels even without the EPA rules. Including the effects of the air rules in the projections increases the reserve margin shortfall in the ERCOT area by just 0.4 percentage points and in the New England area by just 0.8 percentage points.[9] No other areas are projected to have reserve margins below the target margins.

Small though they are, NERC's estimated effects of the Mercury and Air Toxics Rule are likely overstated because they are based on assumptions that are unrealistically stringent. For example, instead of assuming that, under the final rule, utilities will select the least costly option to comply with the rule among a range of options permitted by the rule, NERC assumed that every plant without controls would be forced to install more expensive options (wet scrubbers and baghouses). When the nonpartisan Congressional Research Service examined this assumption from NERC's 2010 report, it found: "NERC assumed requirements that appear to be substantially more stringent than what EPA proposed."[10]

The M.J. Bradley Analysis also shows that EPA Clean Air Act regulations will not threaten the reliability of the electric power system.

The analysis by M.J. Bradley and Associates finds that the electric power industry has many tools to ensure reliability as companies reduce air pollution. The report concludes "a range of options are available under existing law to manage electric system reliability as the industry makes the investments" necessary for compliance.[11]

One reason M.J. Bradley predicts no impact on reliability is that "[c]ompanies representing half of the nation's coal-fired generating capacity—eleven out of the top 15 largest coal fleet owners in the U.S.—have indicated that they are well positioned to comply with EPA's clean air rules because of early investments in their generating fleets."[12] The report also finds that EPA and the states have legal authority to address potential reliability concerns if necessary.[13]

In addition, M.J. Bradley explains that there are currently 38 GW of new generating capacity under construction and another 12 GW of natural-gas fired generation capacity in advanced stages of

[7] U.S. EPA, *Regulatory Impact Analysis of the Proposed Toxics Rule: Final Report* (Mar. 2011) 8-17; U.S. EPA, *Regulatory Impact Analysis (RIA) for the final Transport Rule* (June 2011) 262.
[8] M.J. Bradley & Associates, Analysis Group, *Ensuring a Clean Modern Electric Generating Fleet while Maintaining Electric System Reliability (Fall 2011 Update)*, 3-4 (Nov. 2011), citing NERC, *2010 Long-Term Reliability Assessment*, 32, (Oct. 2010) (Summer Demand); NERC, *2010 Long-Term Reliability Assessment* (Oct.2010).
[9] North American Electric Reliability Corporation, *2011 Long-term Reliability Assessment* (Nov. 2011) 155-156.
[10] Congressional Research Service, *EPA's Regulation of Coal-Fired Power: Is a "Train Wreck" Coming?* (Aug. 8, 20111) 15.
[11] M.J. Bradley & Associates, Analysis Group, *Ensuring a Clean Modern Electric Generating Fleet while Maintaining Electric System Reliability (Fall 2011 Update)* (Nov. 2011) 18.
[12] *Id.* at 5.
[13] *Id.* at 5.

development.[14] Over 37 GW of the new capacity under construction are scheduled to be completed by the end of 2014.[15] This new capacity is substantially larger than that of NERC's projected retirements resulting from EPA's air standards.

NERC's overall estimate of retirements is driven by implausible assumptions related to EPA's proposed Clean Water Act regulation of cooling water intake structures.

NERC estimates that the combined impact of EPA air, water, and coal combustion waste rules will result in 36 GW of retirements by 2018 under the "moderate" case and 59 GW of retirements under the "strict" case.[16] The vast majority of these retirements are driven by assumptions about the proposed rule under section 316(b) of the Clean Water Act, which places restrictions on cooling water intake structures to protect fish populations. Under the "moderate" case, NERC assumes that even though EPA has proposed to adopt flexible technology standards that give sources multiple options for compliance, the following states will choose to require existing plants to install cooling towers, which are the most expensive control option: Alabama, Arizona, California, Delaware, Florida, Georgia, New Mexico, New Jersey, Texas, and states in New England. Under the "strict" case, all plants would require cooling towers.

This seems highly unlikely. Four of these states (Alabama, Florida, Georgia, and Texas) are suing EPA to avoid complying with the Cross-State Air Pollution Rule, which has direct benefits for human health and, according to NERC's analysis, would drive far fewer retirements than the cooling water intake structure rule. Nonetheless, even NERC's "moderate" case assumes that all of these states will voluntarily choose to adopt control requirements substantially more stringent and more expensive than EPA is proposing to require. NERC's analysis then attributes the resulting projected retirements to the EPA rule.[17]

NERC acknowledges the significance of this one assumption. The report states: "While closed cycle cooling is one of the options that states will consider under the guidelines required by the EPA, the proposed rule does not mandate closed cycle cooling. Given its large potential compliance cost and impact, this assumption may have the single largest impact in terms of the amount of capacity that may be economically vulnerable."[18]

[14] *Id.* at 12.
[15] *Id.* at 12.
[16] North American Electric Reliability Corporation, *2011 Long-term Reliability Assessment* (Nov. 2011) 117.
[17] The State of California has independently adopted a closed loop requirement, but this is not a result of EPA requirements.
[18] North American Electric Reliability Corporation, *2011 Long-term Reliability Assessment* (Nov. 2011) 128.