

ACTIVITIES AND INITIATIVES

Clean Air Act

The Clean Air Act requires the Environmental Protection Agency (EPA) to define National Ambient Air Quality Standards for air quality that are protective of public health and welfare. EPA is required to establish and implement programs to improve and protect air quality for several key (criteria) pollutants along with programs intended to address other air related issues such as: acidic deposition (acid rain), ozone depleting chemicals, visibility improvement in the United States' pristine areas and national parks (regional haze) and reduction of emissions of hazardous air pollutants.

Under the Clean Air Act, the EPA has implemented a number of emission control programs that affect industrial sources, including power plants, by limiting emissions of targeted pollutants including nitrogen oxides (NO_x) and sulfur dioxide (SO₂). NO_x is a precursor to the formation of ground-level ozone, acid rain, fine particulate matter and regional haze. SO₂ is a precursor to the formation of acid rain, fine particulate matter and regional haze.

Regulation of NO_x and SO₂ Emissions

To comply with EPA-mandated reductions in NO_x and SO₂ emissions, we are required to

account for each ton of NO_x and SO₂ emitted with emission allowances.

Emissions allowances are created under programs whereby regulatory authorities establish industry-wide budgets or "caps" for certain emissions and then give plants a prorated portion of the total budgeted amount. This allotment or emission allowance allocation is intended to reduce emissions for the whole industry in order to address geographical or seasonal air quality concerns.

Companies that reduce emissions to less than their emission allowance allocation are able to trade their unused emission allowances with companies that exceed their emission allowance allocations. Such programs are referred to as "cap-and-trade" programs. As part of our effort to operate our business efficiently, we concluded that since our generation assets dispatch based on market prices, we should maintain an emission allowances inventory that corresponds with forward power sales. In March 2005, the EPA finalized a regulation, referred to as the Clean Air Interstate Rule (CAIR), to control emissions of NO_x and SO₂ on a broad scale. CAIR requires additional reductions in NO_x and SO₂ in two phases. The first phase, which would take effect in 2009 for NO_x and 2010 for SO₂, requires approximately a 50percent reduction in NO_x and SO₂ emissions on an annual basis. The second phase, which would take effect in 2015, requires additional reductions of approximately 10 percent for a 60 percent

total reduction in NO_x and 15 percent for a 65 percent reduction in SO₂. These reductions would be achieved through a cap-and-trade program, not on a unit-by-unit basis. The regulation requires reductions in 28 states beyond levels already required in existing federal programs and will primarily affect our coal-fired facilities in the eastern United States. In July 2008, the District of Columbia Circuit Court of Appeals vacated CAIR and remanded it to the EPA. The decision raises questions as to whether the EPA can design new cap-and-trade programs for NO_x and SO₂ that are consistent with other provisions of the Clean Air Act relating to the contribution of emissions from one state on the air quality of another. On rehearing, in December 2008, the Court decided that CAIR will remain in effect pending EPA's modification to cure the defects identified by the Court. The Courts' most recent decision will reinstate CAIR's proposed annual allowance-based NO_x program beginning in 2009 and the increased surrender rate for SO₂ allowances beginning in 2010. The existing ozone season NOX program and the SO₂ allowance requirement under the Clean Air Act's acid rain program will continue to be in force.

We have undertaken studies to evaluate possible impacts of CAIR and similar legislative and regulatory proposals, which will primarily affect our coal-fired facilities in the Eastern United States. Based on an economic analysis that includes plant operability, changes in the emission

allowances market, potential impact of state-imposed regulations and our estimate at this time of capital expenditures, we have elected to invest \$64 million in 2009 and up to an estimated \$304 million in 2010 through 2013 to principally reduce our emissions of SO₂.

In June 2005, EPA issued the Clean Air Visibility Rule, which directs states to reduce emissions from power plants and other sources that negatively affect visibility in national parks and other pristine areas. States can adopt CAIR as the control measure to meet these requirements, or can require controls at specific facilities, if they deem such controls necessary. Because the status of CAIR is in question right now, this regulatory approach to the Clean Air Visibility Rule could be revisited, as well.

Regulation of Emissions of Mercury and Other Hazardous Air Pollutants

In December 2000, the EPA found that regulation of mercury emissions from power plants is "appropriate and necessary", triggering the requirement to regulate such emissions using the Maximum Achievable Control Technology (MACT) of the Clean Air Act. However, the EPA pursued an alternative market-based approach for regulating mercury emissions from power plants; known as the Clean Air Mercury Rule (CAMR).

States were permitted to adopt regulations that conform to CAMR or adopt their own mercury regulations that are stricter than CAMR. In February 2008, the D.C. Circuit Court of Appeals struck down CAMR. The EPA appealed, but in February 2009, it withdrew the appeal and stated its intent to proceed with rulemaking under a Maximum Achievable Control Technology (MACT) standard. This approach considers the most effective control technologies in operation, without regard to cost effectiveness. Despite the EPA's statement of regulatory intent, there are multiple legal actions pending with respect to regulating of mercury from power plants.

While the EPA was pursuing CAMR, a number of states, including Pennsylvania pursued mercury regulations that were more stringent than CAMR. The Pennsylvania rule generally requires mercury reductions on a facility basis in two phases, with 80 percent reductions in 2010 and 90 percent reductions in 2015. This rule is the subject of current litigation, and a state court declared Pennsylvania's rule unlawful in January 2009. The Pennsylvania Department of Environmental Protection has appealed this ruling.

Our capital investment plan is based on compliance with the Pennsylvania rule. Our estimate of capital expenditures to comply primarily with the first phase of Pennsylvania's mercury control program is \$49 million in 2009. However, we are

continuing to evaluate our plan given that regulation of mercury from power plants at both federal and state levels is uncertain.

Air Particulates

In September 21, 2006, USEPA issued revised ambient air quality standards for fine particulate matter with an aerodynamic diameter less than or equal to 2.5 microns, PM_{2.5}. In December 2008, the EPA identified geographic areas that are not in compliance with the revised standard (nonattainment areas). Ten of our 11 coal-fired power generation facilities are located in nonattainment areas. States must develop emission reduction plans by April 2012 that brings nonattainment areas into compliance by 2014. These plans may be state-specific or regional in scope. The EPA has estimated that the power generation section SO₂ and NO_x emissions reductions required by CAIR will allow many of the nonattainment areas to achieve compliance with the revised PM_{2.5} standard. However, states are not precluded from developing plans that would require further reductions of SO₂ and NO_x emissions.

Greenhouse Gas Emissions

There is an increased focus within the United States over the direction of domestic climate change policy. Several states in the northeast, midwest and west are

increasingly active in developing state-specific or regional regulatory initiatives to stimulate CO₂ emission reductions in the electric power generation industry and other industries. The United States Congress is considering numerous bills that would impose mandatory limitation of CO₂ and other greenhouse gas emissions for the domestic power generation sector and other sources of greenhouse gases. The specific impact on our business will depend upon the form of emission-related legislation or regulations ultimately adopted by the federal government or states in which our facilities are located. Ten northeastern states, including New Jersey and Maryland, have formed the Regional Greenhouse Gas Initiative, or RGGI, which requires power generators to reduce CO₂ emissions by ten percent by 2019, beginning in 2009. California adopted legislation designed to reduce greenhouse gas emissions to 25 percent below 1990 levels by 2020, beginning in 2012. In February 2007, California and four other states, along with two Canadian provinces and one state in Mexico, agreed to form the Western Climate Initiative, which has since been joined by additional states. In November 2007, Illinois and five other states established the Midwestern Regional Greenhouse Gas Reduction Accord. These regional initiatives are all based on a cap-and-trade program with the cap declining over a period of time. The scope of the program and timing of reductions varies somewhat from program to program. In July 2008, the Pennsylvania

Climate Change Act was adopted. This legislation requires development of reports of the impacts of climate change in Pennsylvania and potential economic opportunities resulting from mitigation strategies. It also requires development of an annual greenhouse gas emissions inventory and establishment of cost-effective strategies for reducing or offsetting greenhouse gases.

In addition, the EPA has announced plans to consider regulations to address CO₂ emissions as part of the Clean Air Act's New Source Review program. Individual states may also begin to take into account CO₂ emissions when considering permits to construct or modify significant sources of emissions.

In September 2007, we joined the Chicago Climate Exchange, a voluntary greenhouse gas registry, reduction and trading system. By joining the exchange, we have committed to reduce our greenhouse gas emissions to six percent below the average of our 1998-2001 levels by 2010. We expect to satisfy our reduction targets through previously implemented unit retirements and capacity factor reductions and ongoing heat rate improvement efforts and transacting on the exchange.

Cooling Water Intake Regulations

In July 2004, the EPA promulgated final regulations relating to the design and operation of cooling water intake structures at existing power plants. In response to this rulemaking, several environmental organizations and Attorneys General of six northeastern states sued EPA alleging the regulations were insufficient for protection of state waters and fisheries. In January 2007, the court responded by remanding the rule to the EPA for substantial revisions and reconsideration. In July 2007, the EPA published notice that its regulations had been suspended pending further rulemaking and the outcome of continuing litigation. The EPA instructed that requirements to minimize potential adverse environmental impacts of cooling water intake structures would therefore return to being implemented plant-by-plant using best professional judgment.

The lower court decision was appealed to the United States Supreme Court. In April 2009, the Supreme Court ruled that EPA acted within its authority in its 2004 regulation that allowed the weighing of costs vs. benefits when determining the best technology available (BTA) for cooling water intake structures at large existing power plants. EPA suspended this intake regulation in July 2007 in response to the lower court decision, but now may consider this reversal in future rulemaking and as part of the current best professional judgment based implementation

Coal Combustion Products

We are very active in identifying and developing markets for beneficially using large quantities of coal combustion products (CCPs; consisting of fly ash, bottom ash and flue gas desulfurization sludge) resulting from the generation of electricity at coal-burning plants. In fact, we recently beneficially used around 70 percent of our CCPs – around twice that of the industry average! Beneficial uses of CCPs at RRI Energy include: substituting fly ash for Portland cement in the production of ready-mix concrete, creation of synthetic gypsum that is used in the manufacture of wallboard, mine reclamation, and as an anti-skid material during the winter months. CCPs have also been used as flowable fill, a self-leveling, self-compacting concrete substitute and as a grout material in a variety of applications. For example, the grout was injected into abandoned former underground mine shafts in order to control subsidence. In an innovative twist, in one project the grout was injected underground to help extinguish a fire that was being fueled by an old coal seam that had been burning for years and had created environmental and safety hazards.

Another noteworthy beneficial use of CCPs involves mine reclamation. These projects help address one of the most serious

environmental challenges in Pennsylvania. It is estimated that over 3,000 miles of streams in Pennsylvania have been degraded by acid mine drainage (AMD) emanating from past coal mining activities, such as old coal refuse piles. Our Seward Station is able to burn this coal refuse – removing a source of AMD from the environment. The alkaline ash generated by burning the waste coal can then be used to reclaim mined areas. The end result is the elimination of a variety of environmental and safety hazards and returning the reclaimed land to a variety of productive uses.

The December 2008 failure of the coal ash pond at the TVA Kingston Station highlights our industry's management of the large volumes of ash generated from the combustion of coal. Unlike the TVA ash that was wet-sluciced into their pond, 95 percent of our generated ash is dry when it is placed into our impoundments. The wet-sluciced impoundments that we do utilize at our Niles station, have a capacity of only 65,000 cubic yards of ash; only 0.2 percent of the Kingston Station pond capacity. Not only are our ponds much smaller, but the ash in the impoundments is frequently removed for either disposal offsite or beneficial use. In Pennsylvania, our ash impoundments are considered storage - not disposal - impoundments and are cleaned out once a year. Finally, we recently completed an engineering evaluation of all of our ash management and process water/wastewater impoundments at our operating coal plants.

The evaluation found no instances of serious deficiencies or areas of concern related to pond embankment structural integrity.

Recycling

We continue to build upon an ongoing comprehensive recycling program. Our efforts not only conserve valuable landfill space, but also contribute to greater preservation of our nation's untapped natural resources. In addition to office materials, such as paper and toner cartridges that are typically recycled, suitable avenues have been identified for the following materials: aluminum, batteries, cardboard, wood pallets, antifreeze, coal combustion products, computer monitors, diesel, drums, gasoline, high intensity discharge lamps, mercury, oily waste, parts cleaning solvents, scrap metal, soil contaminated with oil, used oil and filters.