Testimony of

The Honorable William H. Sorrell

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Chairman Jeffords, Chairman Leahy, and members of the Committees:

Thank you very much for allowing me this opportunity to share my thoughts regarding the New Source Review program.

The quality of our nation's air is of critical importance - not just to those of us living in the northeastern United States, but also to everyone in this great nation and most especially our children, the elderly, and those among us who suffer from respiratory illness.

We have worked hard in Vermont to attain the quality of life that is so important to us. We value our natural resources and do our best to be sure we are not soiling our own backyard. I believe it is fair to say that we join the dialogue regarding air pollution with clean hands.
To give you an idea of the scope of the pollution caused by old, dirty coal-fired power plants, I want to impress upon you that in 1998, all Vermont sources of sulphur dioxide emitted a total of approximately 17,000 tons of SO2. Just one of the plants at issue in the New Source Review enforcement case that Vermont has joined, the Cardinal Plant in Brilliant, Ohio operated by American Electric Power and its affiliated companies, emitted more than 152,000 tons of SO2 in the same year - and this plant is not even the largest of the American Electric Power plants.

We have good reason to be deeply concerned about massive amounts of air pollution carried into our state by the prevailing winds. The impacts attributable to this wind-borne pollution, in Vermont and regionally, are sobering and bear repeating:

? In Vermont, 20% of lakes are moderately to extremely sensitive to acid deposition and several lakes are critically acidic and, thus, unable to support fish and/or other aquatic life.

? Federal studies conclude that the percentage of acidified lakes is expected to increase or even double over the next four decades unless upwind emissions of NOx and SO2 are reduced extensively.

? Acid deposition is a major cause of the widespread decline of red spruce in high elevation forests throughout the Northeast. Since the 1960s, more than half of large canopy trees in the Adirondack Mountains of New York and the Green Mountains of Vermont and approximately one quarter of large canopy trees in the White Mountains of New Hampshire have died. There is also growing evidence that sugar maple decline is linked to acid deposition.

? According to one analysis, even with an 80% reduction in electric utility emissions beyond that required under the 1990 CAA, chemical recovery of certain watersheds to non-acidic levels will take 20-25 years and recovery of the acid - neutralizing compounds in soils will not occur until the year 2050. Biological recovery will take decades if not generations beyond that.

Our children and grandchildren and generations to come will know only of the devastating impacts resulting from decades of air pollution and will not see the recovery of the forests and lakes. Is this to be our legacy?

As a nation, we must take swift and decisive action to improve the quality of the air. We applaud the efforts of EPA and the Department of Justice in working cooperatively with States to protect air quality. Our shared successes have included important victories affirming certain aspects of regulatory programs and the agency's determinations regarding the long-range transport of ozone-forming pollutants.

We also appreciate the ongoing efforts by the agency and DOJ in seeking full implementation of EPA's regional haze rule, which will help to protect and improve visibility in our nation's pristine wilderness areas, including Shenandoah, the Great Smokey Mountains, Yosemite and the Grand Canyon. New Hampshire, Maine and Vermont, joined by Utah and New Mexico, the National Tribal Environmental Council and national advocacy groups have been actively involved in supporting this effort. We are hopeful that these efforts will lead to real improvements in the quality of our nation's air in years to come.

The State of Vermont also is working cooperatively and productively with the Environmental Protection Agency, the Department of Justice, other States and national public interest advocacy groups to enforce the existing New Source Review program against big corporations operating numerous old, dirty coal-fired power plants. There is no question that implementation by EPA of the reform package will seriously undercut these efforts.

Now is not the time to water down the laws needed to protect air quality. The announced reforms of the New Source Review program will take us 180 degrees in the wrong direction. As one state regulator has put it, these reforms will assure longer lives for old, dirty coal-fired power plants and shorter lives for Americans.

We very much hope that the Administration will change course and not backtrack on existing environmental protections. However, if it chooses to go forward with its announced changes, we encourage Congress to reject such efforts to weaken the New Source Review program.

Thank you again for the opportunity to meet with you and to provide these comments.

Supplemental Comments by Attorney General William H. Sorrell
The New Source Review program has been the Act's most effective tool for reducing air pollution. However, the Administration's proposed changes announced June 13, 2002, will change this. These changes will amount to the largest and most significant weakening of clean air regulations in the history of the Act.

The weakening of these regulations is a major public health and environmental mistake. A rollback in the NSR program will result in increased respiratory disease, premature death, smog, acid rain, and degradation of our waters and forests. Pollution from power plants in the form of nitrogen oxides, sulfur dioxide, carbon dioxide and mercury costs Americans thousands of lives and billions of dollars each year. We need to reduce power plant emissions, not allow them to increase in the way proposed by the Administration.

When it originally established the program, Congress recognized that the most cost-efficient time to install new controls was when a power plant was being built or modified. Congress also recognized that many power plants were nearing the end of their useful lives and that requiring new pollution controls on these plants would not be effective or efficient. However, Congress declared that new or modified plants should be as clean as technologically feasible. The Administration's decision departs from this bedrock principle and will have grave consequences for each and every American.

Power Plant Pollution

In terms of the volume and variety of pollutants emitted, and the resulting adverse impacts, no source can compare to coal-burning power plants. These facilities emit the "worst" of our air pollutants - carbon dioxide, sulfur dioxide, nitrogen oxides, particulate matter and mercury. Coal-fired power plants collectively account for about 70 percent of annual sulfur dioxide (SO2) emissions and 30 percent of nitrogen oxide (NOx) emissions in the United States. SO2 interacts in the atmosphere to form sulfate aerosols. These aerosols often travel long distances in the air and contribute to acid rain and haze. NOx also is carried long distances and is a major contributing factor to the formation of ground level ozone, or smog. Coal-burning power plants are also a major source of particulate matter. All of these pollutants cause serious health and environmental impacts.

Adverse Human Health Effects from Power Plant Pollution

The health effects caused by these pollutants are well known and bear repeating:

Premature Death - Fine particulate matter pollution in the eastern U.S. is composed primarily of sulfate aerosols. Because these fine particles can be inhaled more deeply into the lungs than larger particles, they are associated with certain types of respiratory diseases and premature death. Particulate pollution claims the lives of over 30,000 Americans per year.

Asthma - Ozone or "smog" pollution, formed from nitrogen oxides, is increasing at an alarming rate. Smog pollution severely affects this country's 15 million asthmatics. A recent study found that coal-fired power plant emissions trigger 600,000 asthma attacks per year and are responsible for sending 20,000 Americans to the emergency room. Power plant pollution results in 5 million lost workdays.

Neurological and Developmental Damages from Mercury Contamination - Americans should not have to worry about eating fish from rivers, lakes and oceans. Yet, over 40 states have advised their citizens to reduce their consumption of fish from contaminated waterways. Mercury contamination can cause serious neurological and developmental damages in children and infants, including subtle loss of sensory or cognitive ability, delays in developmental milestones, such as walking and talking, and even birth defects.

The most troublesome aspect of power plant pollution is that our children are the most vulnerable to its effects. Many factors increase the risk of children to air pollution as compared to adults. Due to the higher activity level of children, "pound for pound" they breathe more air for

their size than adults do. In addition, their increased time spent playing outdoors further increases their exposure to outdoor air pollution. Studies suggest that children suffer a higher prevalence of asthma than adults, and, thus, asthma makes our children far more susceptible to impacts of air pollution. The lung's defense systems in children are still developing, and are unable to defend against the effects of pollutants as effectively as the lungs in adults.

Human Health Effects Attributed to Power Plants Charged with NSR Violations

A recent report delivered the sobering reality regarding the human health effects that are caused by the power plants that have been charged with NSR violations. The key findings of this report include:

? Pollution from the 51 plants that are targets of the NSR enforcement actions shortens the lives of between 5,500 and 9,000 Americans each year;

? Requiring these plants to meet standards required by law would avoid 4,300 to 7,000 of these deaths;

? Pollution from the 51 NSR plants leads to between 107,000 and 170,000 asthma attacks each year;

? Between 80,000 and 120,000 of these asthma attacks could be avoided by requiring these plants to meet pollution standards as required by law;

? Although all of the plants that are current targets of NSR enforcement are located in the Midwest or Southeast, there is a "transport of death and disease." Pollution from these plants affects downwind Northeastern states resulting in 1,500 to 2,100 premature deaths and 30,000 to 39,000 asthma attacks per year in those states;

? Between 1,200 and 1,700 of the deaths, and between 23,000 and 31,000 of the asthma attacks in downwind Northeastern states would be avoided if the plants met standards required for new plants;

? Requiring the 51 NSR plants to meet pollution standards required by law would yield total estimated monetary benefits of $27 to $45 billion per year.

Harm to Natural Resources

Emissions of NOx and SO2 from power plants also cause extensive harm to natural resources. In the atmosphere, the NOx and SO2 are converted into acids, including nitric and sulfuric acids, and other acidifying compounds. These compounds fall to the ground as wet deposition (acid rain, fog, cloud water, sleet and snow) and dry deposition (gases, aerosols and particles). These acids and acidifying compounds are cycled through the soil, vegetation, and surface waters setting off a cascade of adverse ecological impacts.

Acid deposition has altered, and continues to alter, soils in areas of the Northeast in a number of ways. First, acid deposition has leached base cations, including calcium and magnesium, out of the soil, thereby reducing the soil's acid-neutralizing capacity and fundamentally altering soil

processes. The depletion of these compounds has, in turn, resulted in the accumulation of sulfur and nitrogen in the soils. When leached out of the soil, sulfur and nitrogen contribute to the acidification and nitrogen loading of streams and lakes. Additionally, acid deposition facilitates the mobilization of dissolved inorganic aluminum, an ecologically harmful form of aluminum, into soil waters, vegetation, lakes and streams. High concentrations of aluminum can be toxic to fish, plants and other organisms.

Acid deposition also continues to impair the quality of water in lakes and steams throughout the Northeast by lowering pH levels, decreasing acid-neutralizing capacity and increasing aluminum concentrations. Power plant emissions are largely responsible for the fact that 20% of the lakes in New York's Adirondack Park region are too acidic to support fish life. In Vermont, 20% of lakes are moderately too extremely sensitive to acid deposition and several lakes are critically acidic and, thus, unable to support fish and/or other aquatic life. Similarly, in New Hampshire, nearly half of the lakes have been acidified with some so acidic that they do not support naturally reproducing fish populations. Federal studies conclude that that percentage of acidified lakes is expected to increase or even double over the next four decades unless upwind emissions of NOx and SO2 are reduced extensively. Similar impacts are seen in the lakes and streams of other northeastern states that lie downwind of the defendants' power plants.

Decreases in pH and elevated concentrations of aluminum have reduced the species diversity and abundance of plankton, invertebrates, fish and other aquatic life in many streams and lakes in acid sensitive areas of the Northeast. Although chronically high acid levels stress aquatic life, acid episodes are particularly harmful. Spring runoff from snowmelt creates an annual pulse of acidified water, which enters lakes and streams in huge volumes. This phenomenon, known as acid shock, is particularly harmful to aquatic communities because it occurs during spawning or the early life-cycle stages of many species. Studies have shown that high acidity and aluminum levels disrupt the salt and water balances in a fish's blood, causing red blood cells to rupture and increasing blood viscosity, thereby resulting in a lethal heart attack.

In addition, acid deposition is a major cause of the widespread decline of red spruce in high elevation forests throughout the northeast. Since the 1960s, more than half of large canopy trees in the Adirondack Mountains of New York and the Green Mountains of Vermont and approximately one quarter of large canopy trees in the White Mountains of New Hampshire have died. Recent research suggests that acid deposition leaches calcium directly from cell membranes in spruce needles. This renders the needles more susceptible to freezing damage, thereby reducing a tree's cold tolerance and increasing the occurrence of winter injury. In addition, elevated aluminum levels in the soil, discussed above, limits the ability of red spruce to take up water and nutrients through its roots, leading to reduced tolerance for environmental stress.

There is also growing evidence that sugar maple decline is linked to acid deposition. Extensive mortality among sugar maples in Pennsylvania appears to result from deficiencies of base cations, together with other stresses such as insect defoliation or drought. Acid deposition, and its effect on soil chemistry is a predisposing factor in sugar maple decline.

Total power plant emissions of sulfur dioxide, and consequent deposition in the northeast of sulfuric acid and other sulfur particles, has declined since 1990. However, emissions of nitrogen oxides have remained essentially unchanged. Because of this and given the extensive loss of

acid-neutralizing base cations, the mobilization of aluminum, and the accumulation of sulfur and nitrogen in the soil, the chemical and, in turn, biological recovery of forest and aquatic ecosystems will require extensive reductions of emissions. According to one analysis, even with an 80% reduction in electric utility emissions beyond that required under the 1990 CAA , recovery of certain watersheds to non-acidic levels will take 20-25 years and recovery of soil base cation and aluminum levels will not occur until the year 2050. Many ecosystems are more sensitive to the additional input of acids and acid forming compounds.

Nitrate deposition also contributes to the eutrophication of coastal bays and estuaries, which occurs when an excess of nitrogen causes algae growth that threatens the survival of other aquatic species.

Another significant effect of power plant pollution is the impairment of visibility throughout the nation, including in our national parks and wilderness areas. Electric utility boilers are the predominant source of sulfur dioxide and a principal cause of reduced visibility. Power plants annually release about 13 million tons of sulfur dioxide into the atmosphere, more than 60 percent of the national total. Data show that "visibility impairment caused by air pollution occurs virtually all the time at most national park and wilderness area monitoring stations." States are impacted by the problem of impaired visibility not only because it affects their residents' quality of life, but also in more concrete economic terms due to lowered tourism, diminished appeal for new business activity, and adverse affects on businesses dependent on visitors to national parks and wilderness areas.

Climate Change

Coal-burning power plants also emit CO2 which contributes to global climate change. This is the most pressing environmental challenge of the 21st century. The global nature of the climate change problem would be most efficiently addressed by comprehensive regulatory action at the national level.

The Administration's recent report, U.S. Climate Action Report 2002, projects that emissions of greenhouse gases - primarily carbon dioxide produced from the combustion of fossil fuels - will increase by 43 percent by 2020. The Report also makes it clear that the question of whether global climate change is occurring is no longer in doubt, only the precise rate of change and the specific impacts of that change.

Some states are now initiating measures to achieve reductions in greenhouse gas emissions. For example, Massachusetts last year adopted state regulations requiring carbon dioxide reductions by power plants, and New Hampshire recently enacted "cap and trade" legislation. California's legislature has just passed a bill that will lead to the "maximum feasible" reductions of carbon dioxide emissions from vehicles. New York is also considering a carbon cap. While individual states are prepared to lead the way, a strong national approach will allow for more efficient solutions that will better protect the American economy in the long run.

Conclusion

In sum, I urge the respected members of these Committees to review critically the

Administration's actions on environmental issues, especially the New Source Review program. Congress intended the NSR program to protect and improve air quality and to encourage the installation of cleaner plants. Congress should reaffirm these goals and reject efforts to weaken the New Source Review program.