

Is It Time to Consider the Full Cost of Air Pollution Standards?

The regulated community is facing an unprecedented barrage of new air quality requirements. In 2010, EPA issued new 1-hour National Ambient Air Quality Standards (NAAQS) for sulfur dioxide (SO₂) and nitrogen dioxide (NO₂) and, if all goes according to plan, will issue more restrictive NAAQS for ozone and particulate matter (PM) in 2011. On top of this, the Agency plans to impose emissions standards under the Federal Transport Rule and under its utility boiler air toxics standards and is expected to propose new source performance standards for greenhouse gas emission sources this year.

Not surprisingly, industry has voiced frustration with EPA's actions on a number of issues, including the uncertainty that regulatory change introduces into the process for planning, funding, and executing new projects. But, also high on the list of industry's complaints is EPA's apparent lack of consideration of comprehensive costs versus benefits. For example, in its comments on EPA's proposed changes to the NO₂ NAAQS, the Interstate Natural Gas Association of America (INGAA) criticized EPA for the limited weight given to the uncertainty in health effects analyses, and, citing a U.S. Supreme Court opinion, stated that "EPA is not required to eliminate every health risk at any economic cost". In addition, INGAA noted that "marginal or negative societal benefits are contributing factors that should be considered."

The Clean Air Act (CAA) was enacted in 1970 to "protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." As mandated under the CAA, EPA must establish standards that protect public health with "an adequate margin of safety." However, EPA is prohibited from considering the cost of compliance when establishing



a NAAQS — an interpretation of the CAA that was upheld in a 2001 Supreme Court ruling.

At the time the CAA was originally written, the prevailing view of the scientific experts was that thresholds exist below which concentrations of pollutants have no adverse effect on human health. However, some scientists now say, and EPA agrees, that for many pollutants, including ozone and PM, there is no identifiable non-zero threshold below which human health is unaffected. But if health benefits are greatest for the population as a whole at zero concentration, how can EPA set an above-zero standard based on health factors alone? Wouldn't the weighing of all recognized costs and benefits inform the process? And, to properly analyze the potential health benefits associated with proposed standards, shouldn't uncertainty be given greater consideration?

In a 2002 report commissioned by Congress, the National Research Council (NRC) details concerns with EPA's lack of a comprehensive assessment of uncertainty in setting standards. The report states

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FROM THE TRENCHES

Family History Can Be a Powerful Hobby

In 1634 two ships, the Ark and the Dove, carried more than 300 settlers from England to the newly-formed colony known then as the Province of Maryland. On the northern shore of the Potomac River where it meets the Chesapeake Bay, they established what today is the fourth permanent English settlement in North America, the town of St. Mary's.

Just 40 years later and 85 miles further up the Bay, Anthony Asher was born in what is today extreme eastern Baltimore County. Not much is known about Anthony, but he does appear on the 1706 Maryland Tax List. The following year he acquired 100 acres near Saltpeter Creek, which drains into the Chesapeake Bay. He died later that year, and 36 years later one of his sons, Anthony (a popular name in the family) obtained 220 acres, referred to as "Asher's Purchase."

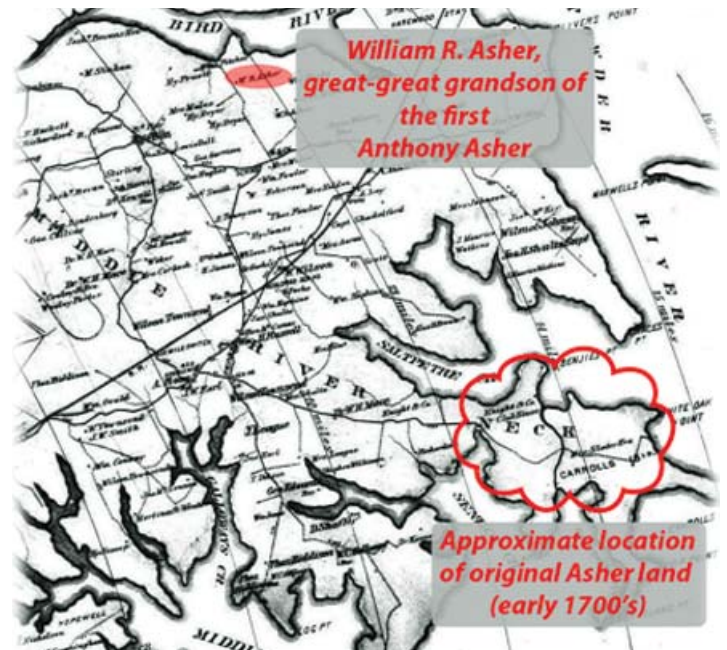
Over the next nearly three hundred years the Asher family would live along the Middle River Neck in eastern Baltimore County, with Saltpeter Creek to the north and Seneca Creek to the south. Into the early 19th Century they owned hundreds of acres of Philips Island, which is today referred to as Carroll Island. Through the late 1800's and into the early 1900's their land was the site of a very popular duck hunting club — both President Benjamin Harrison and Babe Ruth hunted there. Today the portion of the Asher land on Carroll Island is now part of the Aberdeen Proving Grounds and the scene of open-air testing of chemical agents from the 1950's to the early 1970's.

Some of those Ashers ended up in Baltimore City itself, including my grandmother, Hilda Evans Asher. Carrying it through to the present day, my oldest daughter's middle name is Asher.

It probably will come as no surprise to you at this point that I have done a good bit of research into my family history. Some of the first family history research I did was on my Asher line, and that led me to Asher Road which is on the site of the original Asher land. I've traced my Asher line back to the first Anthony I mentioned above — he is my seven times great-grandfather (that means my great-great-great-great-great-great-great-grandfather).

Okay, so if you're into genealogy you've probably found this article somewhat interesting so far but you're wondering why in the world it is in *Currents*. If you're not into genealogy you've probably found this article rather uninteresting, and you're probably also wondering why in the world it is in *Currents*.

Well, fifty years ago on the southern edge of the land my Asher family had held since the early 1700's, the 400-MW Charles P.



Crane Generating Station (Crane) was built. When it came on-line in the early 1960's it was an oil-fired plant, but switched to coal after the Energy Supply and Environmental Coordination Act of 1974. Originally part of Baltimore Gas & Electric, it is now operated by Constellation Power Source Generation, a subsidiary of Constellation Energy Group.

I first saw Crane when I visited Asher Road some 15 years ago, and since then I've seen it many times while boating on the Bay. But it wasn't until this year that I had an opportunity to work on a project for the Crane plant. The project itself wasn't anything out of the ordinary, not rising to the hair-raising level of some of the "down and dirty" tales reported in the "From the Trenches" column of *Currents*. However, it did mean a little something extra to me to think that things had come "full circle," from Anthony Asher farming there in the early 1700's to his 7x great-grandson providing air quality consulting services to the power plant that now sits on Anthony's former land — a power plant that has been providing electricity to the Baltimore area for the last half century.

So, for those of you out there who haven't delved into your family history, I encourage you to do so (getting started isn't tough at all — feel free to drop me a line and I'll be glad to give you some tips). Knowing your family history helps you appreciate the people that came before you and how they shaped who you are today. Who

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AN ATTORNEY'S PERSPECTIVE

Confidentiality of Consultant Work Product

This article discusses how consultants' work product generated in administrative proceedings can be shielded from discovery in litigation. Work product includes environmental assessments, audits and opinions.

It is a rule of discovery that a party may not discover documents prepared "in anticipation of litigation" by another party or the other party's consultant unless the documents are "otherwise discoverable" or the party has a "substantial need" for the documents and cannot obtain their equivalent by other means without undue hardship. The purpose of the rule is to allow parties to prepare for litigation without fear that their efforts will be used against them.

The confidentiality of work product applies to administrative proceedings. A government agency's abatement order, for example, has the potential to be elevated to the courts for enforcement against the client. Documents prepared by a consultant to advise the client on how to respond to the order are therefore prepared "in anticipation of litigation" and so are work product protected from discovery. In contrast, documents prepared in the ordinary course of business are not protected.

An environmental assessment in support of a client's decision to purchase property generally is not protected because it is performed in the ordinary course of business. Further, if the client is sued by the purchaser for preexisting property contamination, the client would likely introduce the assessment into evidence as part of an innocent purchaser defense. This would waive the document's confidentiality.

An audit of a client's environmental compliance presents a more difficult question. Was the audit prepared "in anticipation of litigation"? One way to answer the question is to consider whether the audit was conducted to help develop the client's position against the prospect of litigation. If, for example, the audit was prepared to inform the client's response to a notice of violation (NOV) and the NOV states a failure to respond could lead to enforcement, then the audit would be protected from discovery, even though information based on the audit was included in the response. On the other hand, if the audit was prepared as part of a routine self-evaluation process, then the audit is not protected. Some states have enacted legislation that protects routine audits from discovery as long as reporting and response obligations that apply to the noncompliance uncovered by the audit are satisfied by the client in a timely manner.

The case law indicates consulting opinions regarding a permit application are not protected from discovery because they are



not generated in anticipation of litigation. The mere possibility that agency actions on the permit could become the subject of administrative or civil litigation does not, in the eyes of the courts, rise to the level of anticipated litigation. On the other hand, if the client had in mind when the application was prepared that litigation of the application was likely, then the opinions may be protected from discovery.

The law on opinions regarding permit applications needs further development for two reasons. First, litigation of a permit decision often restricts the introduction of evidence to that which was entered into the administrative record before the litigation commenced. The permit application must, accordingly, be prepared as if litigation is a distinct possibility to develop the client's case against all possibilities before the record is closed. This warrants at least presumptive if not conclusive work product confidentiality for a consultant's opinions regarding the application. Second, the agency's pre-decisional memoranda on the application are protected from discovery under the deliberative process provisions of the Freedom of Information Act and state records laws. Equity requires that the client appearing opposite the agency in the proceeding be accorded the same protection for opinions that informed the client's preparation of the application.

Work product that is protected from discovery may lose the protection if it becomes "otherwise discoverable." This occurs if the protection is waived. A waiver can occur when the client self-reports to the agency regulatory noncompliance uncovered during an audit, and includes with the report excerpts of the audit. The agency or a third party may then be able to secure discovery of the entire audit during litigation of the noncompliance. The waiver

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News Briefs

national news

Congress Comes Out Swinging at Greenhouse Gas Regulation

Since taking control of Congress in January, Republicans have wasted no time introducing legislation to prevent EPA from regulating greenhouse gases (GHGs). Versions of recently proposed bills in the House and Senate would prohibit EPA from regulating GHGs under the Federal Clean Air Act, prohibit the use of EPA funds to implement a cap-and-trade program and new source standards for GHGs, and suspend permitting and new source standards for carbon dioxide and methane emissions for two years. EPA's regulation of GHGs has been a lightning rod for Congressional opposition and committee investigations, with EPA Administrator Lisa Jackson appearing before Congress more than any other federal agency director. EPA budget cuts on the order of 30 percent have been threatened to "rein EPA in". For further information, contact David Mahler P.E. at 410.312.7909 or dmahler@zephyrenv.com.

EPA Extends 2010 Greenhouse Gas Emission Reporting Deadline

On March 1, EPA announced it would extend the deadline to report 2010 GHG emissions from March 31 to September 30. The extension affects those facilities subject to reporting calendar year 2010 GHG emissions. EPA cited the reason for the extension is to allow adequate time to finalize and test its electronic Greenhouse Gas Reporting Tool, e-GGRT, which is required for emissions reporting. EPA also noted that the e-GGRT registration deadline is now effectively moved to August 1, 2011 (for those that have not already registered with e-GGRT). For more information, contact Eric Quiat at 512.579.3823 or equiat@zephyrenv.com.

EPA Proposes New Air Toxics Standards for Power Plants

Meeting its court-ordered deadline, on March 17, EPA proposed a national emissions standard for air toxics emitted by coal-fired and oil-fired power plants. The rule, which focuses on emissions of mercury, particulate matter (as a surrogate for toxic non-mercury metals), and hydrogen chloride (as a surrogate for toxic acid gases) would require add-on pollution controls on virtually all coal-fired power plants, at an EPA-estimated cost of \$10 billion. It is expected that some power plants will shut down, rather than install the required controls. Utilities

are required to comply with the new rule three years after it is finalized. For further information, contact Jennifer Seinfeld at 410.312.7915 or jseinfeld@zephyrenv.com.

OSHA Makes Injury Illness Prevention Program Top Priority for 2011

On January 5, OSHA administrator David Michaels announced that OSHA's upcoming Injury and Illness Prevention Program rule (I2P2) is the Agency's top priority for 2011. While OSHA already has standards in place for workplace safety, these requirements only address part of what the I2P2 rule will require. In contrast, I2P2 is an over-arching management system requiring a proactive approach by employers to reduce injuries and illnesses, mandating management involvement; employee participation in establishing, maintaining and evaluating the program and roles in incident investigations; hazard identification and assessment; hazard prevention and control; education and training; and the monitoring and improving of performance. Many employers who believe they are exempt from certain OSHA standards will not be excused from this rule. For more information, contact Tiffany Giles at 512.879.6630 or tgiles@zephyrenv.com.

EPA Amends Portland Cement Air Toxics Standard

On January 18, EPA published final amendments to its air toxics and air emissions standards for Portland cement plants. This action clarifies the dates that existing sources must comply with September 9, 2010 amendments to the standards and restores the effectiveness of emissions limits for kilns, clinker coolers, and raw material dryers that existed before September 9, 2010. In addition, the amendments corrected two typographical errors. For more information, contact Lynne Spector at 410.312.7906 or lspector@zephyrenv.com.

EPA Updates AERMOD

On March 2, EPA announced that it will soon be rolling out an updated version of its workhorse regulatory air dispersion model, AERMOD, to facilitate modeling for showing compliance with the 1-hour NO₂ air quality standard. The new version of AERMOD will be able to automatically analyze the contribution from project emissions to the cumulative impacts at each receptor across a user-specified range of ranked values, paired in time and space. In addition, when more than one year of meteorological data is examined, it will be able to

examine ranks paired across the years. The updated AERMOD will also be able to pair monitored values with modeled concentrations based on temporal factors associated with meteorological variability and will reflect worst-case meteorological conditions in a manner that is consistent with the probabilistic form of the 1-hour NO₂ standard. For further information, contact Sid Bhardwaj at 512.879.6648 or kbhardwaj@zephyrenv.com.

EPA Issues Air Toxics Standards for Boilers

In response to federal court orders, on February 21, EPA issued two rules intended to reduce hazardous air pollutant (HAP) emissions from new and existing industrial, commercial, and institutional boilers and process heaters. The rules, which apply to boilers and process heaters located at major sources of HAPs and boilers located at non-major (area) sources, establish work practice standards and/or emission limits for HAPs and HAP surrogates. Gas-fired boilers and existing small-capacity boilers at area sources are not subject to any of the new emission limits or work practice standards. In finalizing these rules, EPA stated that, because they differ from the respective proposals, it plans to “reconsider” the final standards in order to seek additional public review and comment. For more information, contact Curtis Harder at 512.879.6643 or charder@zephyrenv.com.

EPA Amends Testing and Monitoring Requirements for Boilers

On January 20, EPA amended new source performance standard testing and monitoring requirements for electric utility and industrial-commercial-institutional steam generating units, addressing issues raised in a petition for reconsideration filed by the Utility Air Regulatory Group. Most notably, the amended rule eliminated the EPA Method 202 condensable particulate matter (PM) testing requirement for facilities equipped with continuous PM emissions monitoring systems providing the option 1) to determine compliance with an applicable filterable PM standard, or 2) in lieu of a continuous opacity monitoring system (COMS). Also, the amended rule delays until April 29, 2011, the requirement to conduct periodic monitoring at affected facilities subject to an opacity standard but which do not use a COMS. For more information, contact Lou Corio at 410.312.7912 or lcorio@zephyrenv.com.

EPA to Study Hydraulic Fracturing Impacts on Drinking Water

In response to a Congressional directive to investigate the potential for adverse effects on drinking water and public health resulting from hydraulic fracturing, EPA released, on February 7, the draft of a plan for studying the potential impacts of hydraulic fracturing on drinking water resources. The development of this draft plan

closely follows EPA's December 2010 request to nine natural gas companies to voluntarily provide information about the hydraulic fracturing process. At this point, no timeframe has been set for conducting and completing this study. For more information, contact Dan Mueller at 512.579.3844 or dmueller@zephyrenv.com.

OSHA Clarifies Enforcement Responsibilities for Personal Protective Equipment

On February 10, OSHA issued guidance to its enforcement personnel on the Agency's general enforcement policy regarding personal protective equipment (PPE) standards and clarified what type of PPE employers must provide at no cost and under what circumstances they must pay for PPE. Published as “Enforcement Guidance for Personal Protective Equipment in General Industry,” this guidance continues an ongoing effort by OSHA to focus on the importance of PPE and employer obligations. For more information, contact Bonnie Blam at 512.579.3817 or bblam@zephyrenv.com.

EPA Proposes to Retain Existing Carbon Dioxide Air Quality Standards

On January 28, EPA proposed to retain the current 8-hour and 1-hour national air quality standards for carbon monoxide (CO) after review of available health science. However, EPA proposed to revise CO monitoring network requirements to include a minimum set of monitors at near-road locations to better represent ambient CO levels due to mobile sources. EPA is proposing to require co-location of CO monitors with a subset of nitrogen dioxide (NO₂) monitors that are required as part of the recent NO₂ air quality standard rule. In keeping with a court ordered schedule, the final CO rule must be issued by August 12, 2011. For more information, contact Roger Brower at 410.312.7907 or rbrower@zephyrenv.com.

state news

TPDES Multi-Sector General Permit to Expire August 14

Nearing the end of its 5-year lifespan, the current Texas Pollution Discharge Elimination System (TPDES) Multi-Sector General Permit (MSGP) for storm water associated with industrial activity will expire August 14. The draft of the permit prepared by the TCEQ to cover the next five years was reviewed and approved by the EPA and is available through April 12 for public review and comment. Once the final MSGP has been issued, owners and operators of all facilities currently permitted under the MSGP will be required to amend their Storm Water Pollution Prevention

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Plans to meet the requirements of the new MSGP and submit a Notice of Intent by November 21. For more information, contact Robin Cosgrove at 512.879.6623 or rcosgrove@zephyrenv.com.

EPA Reclassifies DFW as Serious Nonattainment for the 8-hour Ozone Standard

On January 19, EPA finalized its finding that the 9-county Dallas Fort Worth (DFW) ozone nonattainment area has failed to attain the 1997 ozone air quality standard by the June 15, 2010 attainment deadline, resulting in the reclassification of the air from moderate to serious with respect to the 0.08 part-per-million standard. With this re-designation, the threshold of nitrogen oxide and volatile organic compound emissions that trigger the requirement for nonattainment new source review (NNSR) of a new source in the DFW area is lowered from 100 tons/year to 50 tons/year and the NNSR triggering threshold for modifications at existing major sources is lowered from 40 tons/year to 25 tons/year. For more information, contact Ed Fiesinger at 281.668.7353 or efiesinger@zephyrenv.com.

Ozone Nonattainment Permitting Ends for El Paso and Beaumont–Port Arthur

On February 25, the TCEQ published adopted rules in the *Texas Register* that confirm that the former El Paso and Beaumont–Port Arthur nonattainment areas are no longer subject to nonattainment new source review (NNSR) permitting requirements for either the one-hour ozone standard or 1997 eight-hour ozone standard. The TCEQ based this rulemaking on EPA comments made in the October 20, 2010 approval of the re-designation of the Beaumont–Port Arthur 1997 eight-hour ozone nonattainment area to attainment and clarification of the previous approval of the El Paso maintenance plan for the 1997 eight-hour ozone standard. These rules went into effect March 3. For more information, contact Larry Moon at 512.879.6619 or lmooon@zephyrenv.com.

Louisiana Issues PSD Permit with Greenhouse Gas Limitations

On January 27, the Louisiana Department of Environmental Quality issued the nation's first Prevention of Significant Deterioration (PSD) permit under the EPA's "Tailoring Rule" to address the control of GHG emissions. The permit, issued to Nucor Corporation for two new direct reduced iron (DRI) production units, established that best available control technology (BACT) requirements for GHGs are met by installing energy efficient equipment and using "good combustion practices". In its January 7 comments on the draft permit, EPA Region 6 recognized that the DRI technology is "very much in the spirit of reducing GHG emissions" but criticized the permit for the lack of a numeric emissions limitation for GHG emissions as well as its failure to evaluate carbon capture and storage. It is not known whether EPA will appeal the issuance of this permit. For more information, contact Jennifer Seinfeld at 410.312.7915 or jseinfeld@zephyrenv.com. ☀

knows, you might be surprised at how much "overlap" you discover between your world today and the world of your ancestors.

And speaking of that overlap, remember my grandmother Hilda Evans Asher? Her husband was Charles Barham Bechtel, who retired as the Head of the Underground Department for Baltimore Gas & Electric in the 1980's — the same company that built the Crane plant! ☀

Bill Jones
Senior Project Manager

may be limited or avoided if the client reports the noncompliance to the agency without excerpting, summarizing or citing the audit.

Protected work product the confidentiality of which is not waived may nonetheless be discoverable if the party seeking discovery can demonstrate (1) it has a substantial need for the documents to prepare its case and (2) it cannot obtain the substantial equivalent of the documents by other means without undue hardship. This rule can encompass documents concerning industrial operations, if the preparation of the documents materially depended on the client's unique knowledge of the operations. Because the government and third parties are unable to reproduce the client's unique knowledge or guide their own experts in the preparation of substantially equivalent work product absent such knowledge, the courts hold the documents discoverable to assist the government or third party in developing its case against the client. ☀

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U.S. Energy Policy — When Is a “Choice” Actually a “Dilemma”?

United States policymakers have been wrangling with difficult choices on energy policy since the Industrial Revolution, but particularly so over the past 40 years. Our voracious energy appetite is fed by a number of energy sources, including coal, oil, natural gas, nuclear power, and renewables, and each source of energy has its own advantages and disadvantages. Forty percent of our net energy consumption comes from oil, but oil raises concerns about “energy security” (i.e., the massive amounts we must import from other countries), “peak oil” (is it starting to run out?), and its contribution to global climate change. The U.S. has been called “the Saudi Arabia of coal” due to our extensive supplies, but its use poses concerns about pollution and safety (reportedly, the extraction and use of coal in the U.S. causes about 15 deaths per billion kilowatt-hours, versus about 4 for natural gas, and about 0.04 for nuclear power). New techniques for extracting domestic natural gas show promise for increasing domestic supplies, but those same techniques (“fracking” shale formations) are being challenged based on potential environmental impacts.

Notwithstanding the accident at the Three Mile Island nuclear plant over thirty years ago, nuclear power has been safely and reliably delivering about 20% of the nation’s electric power needs via 104 nuclear reactors at 65 nuclear power plants around the country. Nuclear power proponents have called for adding to our nuclear power capability, given that it produces essentially no air pollution or greenhouse gases and given significant advances in the efficiency and safety of reactor designs. Even some members of the environmental community have agreed that, given the concerns about global climate change and energy security, nuclear power is worth a fresh look. In fact, the Obama administration, through the Department of Energy, has been on the record as supporting nuclear power as a growing part of our energy solution.

Then, on March 11 of this year, the eyes of the world turned to Japan as it struggled with the triple calamities of earthquake, tsunami, and failure of the power and control systems at the Fukushima Daiichi nuclear power plant on that nation’s northeast coast. A month later, the Japanese are still struggling with the aftermath of these disasters, and efforts to get radiation levels back under control at Fukushima are ongoing. The human tragedy and environmental disaster in Japan have certainly given pause to proponents of nuclear power.



Beyond the catastrophe in Japan, the U.S nuclear energy industry has a large and growing problem with what to do with spent nuclear fuel, which continues to emit radiation. The lack of disposal site(s) and our inability or unwillingness as a nation to strike a compromise on the final resting place(s) for our radioactive wastes have resulted in the nuclear power plants accumulating spent fuel rods on site at the rate of 4.4 million pounds per year. Two-thirds of U.S. reactors have already reached their maximum storage capacity for this waste.

Given all these factors, how do we make progress on the issue of refining our national energy policy? Well, it’s certainly not hopeless. Since the 70’s, the U.S. has become essentially twice as energy efficient as measured by energy per dollar of GDP. Our science, technology, and engineering design have similarly progressed, although the disaster in Japan reminds us that no human construction can ever be completely fail/safe.

It seems to me that we must get past our typical style of debating issues, which is to line up the various interest groups with each trying to argue the loudest for the approach that best fits its narrow agenda. Instead, we need to put the environmental and safety factors of the range of energy solutions into perspective by conducting a full and honest accounting of the costs and benefits, considering, in a holistic fashion, their impacts on society at large. In an energy economy the size of ours, any changes we make will be slow and incremental, but we need a plan to keep our choices from becoming dilemmas. ✨

Joe Zupan
President

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that decision-makers, as well as the public, cannot know without a quantitative uncertainty analysis whether the benefits summarized in EPA's regulatory impact analyses are within the ballpark of likely effects. Follow-up reports (as recent as 2010) on EPA's progress in addressing the NRC's concerns have found that EPA's basic approach to presenting uncertainty remains largely unchanged.

In general, socioeconomic studies have shown that the total economic cost of compliance with regulations is always greater than the direct cost to the regulated industry itself. When the economic net is cast more broadly, it is often the case that sectors of the economy seemingly unrelated to the regulated industries can be negatively affected by environmental regulations. For example, it isn't just the rate payers that bear the cost of increased emissions controls on power plants — the costs of goods and services ranging from a loaf of bread to the delivery of medical care are also affected.

The benefits versus costs discussion heats up when considering the potential societal impacts of the looming, interrelated tightening of the ozone and PM_{2.5} NAAQS and further reductions in NO_x and SO₂ emissions allowances under the EPA Transport Rule. The upshot of these regulations, together with the impact of the forthcoming utility boiler air toxics rule, are projected to result in the retirement of a significant number of older coal-fired units not equipped with the necessary emissions controls (e.g., scrubbers). In particular, the North American Reliability Corporation projected that these and other new EPA regulations (e.g., Coal Combustion Residuals disposal rule — see the January

2011 issue of *Currents*) could force the retirement of roughly 50 gigawatts of electric generating capacity. One recent study projected that this transformation to a cleaner, more modern fleet through retirement of older, less efficient plants, installation of pollution controls, and construction of new capacity will result in a net gain of over 4,250 jobs in the Eastern U.S. alone, while improving air quality at the same time. However, should construction of new capacity be delayed or curtailed, this rosy employment picture could fade, while at the same time, society could have to bear a debilitating "cost" due to the lack of available power (i.e., brownouts/blackouts). Meanwhile, recent Electric Power Research Institute studies indicate that claims regarding adverse health effects attributed to PM sulfates (relied upon by EPA in establishing the new 1-hour SO₂ NAAQS and the more restrictive PM_{2.5} NAAQS under consideration) are questionable.

Many would proudly point to this country's collective ingenuity and "stick-to-it-ive-ness" that have enabled us to achieve CAA-required air quality improvements without adverse, long-term impacts to society. After all, as touted by EPA, the ambient concentrations of all criteria pollutants have decreased by more than 20 percent since 1980, even while economic activities that generate air pollutants have increased. However, without a consideration of all costs and benefits in setting more restrictive quality standards, will society be forced to increasingly trade off macro-economic losses for micro-health gains? The debate still rages on. ✨

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