

Solving the Nuclear Waste Disposal Dilemma: Let's Finally Get It Right!

Picture this: a moderate earthquake occurs with an epicenter only 11 miles from a nuclear power plant. The reactors and spent fuel pools are not damaged, although some of the massive, 115-ton concrete and steel casks storing spent nuclear fuel shift on their foundations by several inches. Luckily, there are no radiation leaks.

Sound ominous? That's exactly what happened on August 23, 2011, when a 5.8-magnitude quake shook the North Anna Power Station in Virginia. Such an event, as well as the catastrophe at Japan's Fukushima Daiichi Nuclear Power Plant in March 2011, underscore the need for urgent, effective action by the U.S. government to establish a permanent deep geologic repository for the waste generated by nuclear power plants in this country.

A History of Money Wasted and No Solution

To understand the frustrating state of affairs regarding nuclear waste disposal, we first need to trace the long history of laws and policies that have attempted to address this issue. Since 1983, as required under the Nuclear Waste Policy Act, electricity customers have paid approximately \$30 billion into the federal Nuclear Waste Fund for the development and operation of a national repository. Nearly half of this total was spent on developing the Yucca Mountain site in Western Nevada, designated by the federal government in 1987 as the nation's first permanent nuclear waste repository. The original timetable called for Yucca Mountain to be licensed by January 31, 1998 (when the Department of Energy [DOE] was contractually obligated to start accepting spent nuclear fuel), but federal and state government wrangling continually delayed the licensing. Then, in 2010, the Obama Administration withdrew the license application and halted funding for Yucca Mountain, leaving the U.S. with no permanent nuclear waste disposal site. In



response, utilities filed a flurry of successful lawsuits to cover the future costs they will bear to store and process nuclear waste. The government estimates that these suits could cost taxpayers \$16 billion in liability damages by 2020 with annual costs of several hundred million dollars thereafter until a permanent disposal solution is developed.

Where Is Spent Nuclear Fuel Stored Now?

Currently, about 65,000 metric tons of spent fuel from commercial nuclear reactors have no other place to go but on the grounds of the reactors themselves, where it is placed either in indoor water-filled pools or outdoors in aboveground "dry" casks. As of November 2010, 63 spent fuel storage facilities were licensed to operate at 57 sites in 33 states (not including storage at nine decommissioned nuclear power plants). About 2,000 tons of new waste are generated annually, and the Nuclear Regulatory Commission estimates that nuclear power plants will reach full pool storage capacity in 2015.

Where Do We Go From Here?

After halting funding for Yucca Mountain, the Obama Administration established the Blue Ribbon Commission on America's Nuclear Future to review

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FROM THE TRENCHES

Innocents Abroad

A century and a half ago American humorist and satirist, Mark Twain, wrote his famous book, *The Innocents Abroad*, chronicling his humorous (and sometime serious) experiences as an American traveling in foreign lands. It is with apologies to Mr. Twain that I would like to relate some of my more memorable experiences as an American environmental consultant working abroad. Over a century later, some things never change.

In 1999, I was invited to China by the Chinese Research Academy of Environmental Sciences to assist in developing a road map to reduce industrial sulfur dioxide emissions. It was an exciting opportunity and a privilege to be selected as part of the international team. When I met my client I was greatly looking forward to my first authentic Chinese culinary experience. Enter the Snake Restaurant. As you walked in, there was a large glass aquarium with a menagerie of withering, menacing snakes. We were directed to pick out our lunch (somewhat hard to do when the snakes were all wrapped around each other). Soon lunch was served. The starter was hard crackers (everything good so far). Next course, rice wine with snake blood mixed in (things were going downhill). The main course: boiled and grilled snake with a bile sauce (no comment). I was so enthralled with the fact I had successfully finished my servings that I complimented my client on his restaurant selection. Big mistake. I was about to embark on a several-day culinary adventure of the best snake restaurants in Beijing starting with breakfast the next morning.

Another unforgettable travel experience was halfway around the world in Ukraine. A major U.S. firm had brought me onboard to perform an environmental assessment of a factory being considered for purchase. Our home base was the city of Zhytomyr, and we were being put up in a downtown hotel that was reportedly one of the “finest” in the city. The check-in proceeded smoothly until we were each given a bucket of water to take to our rooms. As it turned out, because of water pressure issues in the city, running water was only available for a few hours per day.

Auditing a Soviet-era manufacturing plant can be interesting. Asbestos peeling off of the beams and visible evidence of site contamination were the norm. One facility I audited presented a unique auditing challenge — we had to make sure that procedures were in place so none of the raw materials used at the plant came from the Chernobyl Exclusion Zone. It certainly would not do for radioactive products to be distributed all over the European Union. Europe had enough of that from Chernobyl the first time.

South America is one of my favorite destinations for consulting work. A few years ago in Peru, I was an instructor for a conference



that bought stakeholders together to develop a strategy to phase out leaded fuels in the country. Peru is the third largest country in South America with over 75 percent of the population living in urban areas. This urban population was at risk to atmospheric lead pollution, as evidenced by the typically high lead concentrations in blood samples, especially in the poorer communities.

I arrived in Lima on a Sunday night and proceeded to collect my luggage and hire a taxicab. Upon handing the cab driver the written address of the hotel, what came out of his mouth were words like “impossible,” “dangerous,” and “you may be killed.” That caught my attention — so much for jet lag. I had no “Plan B” for lodging, so I pleaded with him to take me to the hotel. After much discussion, he relented. An hour later he pulled up to a hotel in a neighborhood that did indeed look spooky. Before I left the taxi, he wrote out a handwritten note which I signed and dated. It was a disclaimer relieving him of responsibility if I disappeared.

As it turns out I did survive the night unscathed, and the next day I discovered the conference was actually being held in my hotel. The Minister of the Environment wanted to make a political statement by having a conference in the type of community being

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Emerging Legal Issues in Hydraulic Fracturing

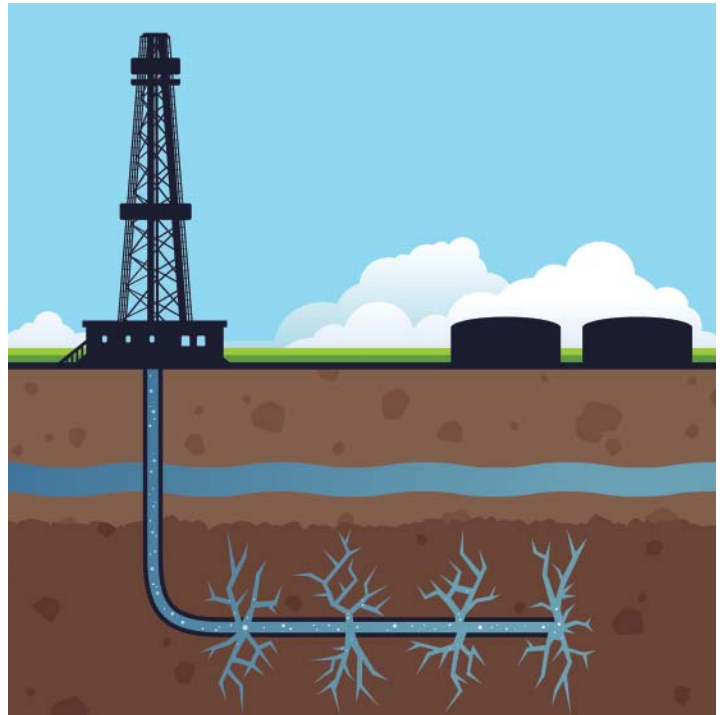
Hydraulic fracturing (“fracking”) can be traced back to the 1860’s, but the recent dramatic increase in the use of long-lateral horizontal drilling with multi-stage fractures in shale plays, particularly in more urban areas, has heightened the interest of the public and regulators today. While these shale plays may hold the potential to dramatically increase domestic oil and natural gas production, opposition groups voice concerns over water consumption, the content of fracking fluids (typically 90% water, 9.5% sand or other proppant, and 0.5% other chemicals), risk to groundwater/surface water, air emissions, and other adverse impacts.

As long as standard industry safeguards and procedures are implemented, there appears to be little risk to groundwater or surface water from fracking. For instance, in a recent study published by the Energy Institute at the University of Texas at Austin, entitled *Fact-Based Regulation for Environmental Protection in Shale Gas Development*, researchers found that hydraulic fracturing of shale formations has no direct connection to groundwater contamination and that many of the problems ascribed to hydraulic fracturing are actually typical of all oil and gas drilling operations, including casing and cement failures.

One common theme among new regulations is an increased desire for disclosure of the contents of fracking fluids. For instance, in 2011 the Texas Legislature passed a statute mandating the disclosure of chemical additives in fracking fluids. Although subject to trade secret protections, it required the disclosure of information such as the total volume of water used and a name, description, and concentration of each chemical ingredient added. Disclosure must be made with the regulatory agency and, perhaps more significantly, posted online at *FracFocus.org*.

At the federal level, fracking is exempted from the Safe Drinking Water Act (SDWA), except when diesel fuel is used in the frac fluid. Various bills have been introduced, without success, to remove this exemption. Despite this exemption, fracking regulation is still well under way. In 2011, EPA announced that it is developing guidance for the use of diesel fuel in fracking and, by 2014, it will propose pretreatment standards for fracking wastewater being sent to publicly owned treatment works. EPA also released its Hydraulic Fracturing Study Plan, which outlined a process for the study of the entire “life cycle” of fracking including analysis of water acquisition, chemical mixing, well injection, flowback, and wastewater treatment/disposal. The study will also include five retrospective case studies. Initial results are expected in 2012, with a final report in 2014.

Furthermore, EPA is addressing air emissions by proposing to broaden the list of oil and gas operations subject to New Source Perfor-



mance Standards to include the hydraulic fracturing of gas wells. The rule proposes new operational standards for completing frac gas wells, aimed at capturing or reducing escaping gases at wells.

Various cases have been filed across numerous jurisdictions regarding the alleged impacts of fracking. One example case highlighting the conflict between EPA and regulated entities is the *Range Resources* case currently pending in the Fifth Federal Circuit. In December 2010 EPA issued an Emergency Order under the SDWA, without notice or opportunity for hearing, alleging that Range Resources’ fracking operations caused methane contamination in two domestic water wells. Failure to comply could lead to a \$16,500 per violation, per day penalty.

On January 18, 2011, the U.S. Department of Justice filed a complaint in federal court alleging noncompliance, and two days later, Range Resources appealed the EPA order directly to the Fifth Circuit. Concurrently, the Commissioners of the Railroad Commission of Texas, the overseeing state agency, conducted an in-depth investigation, including holding an evidentiary hearing, and in March 2011, unanimously found that Range Resources did not contribute to the contamination alleged by EPA. The EPA cases involving Range Resources have yet to be resolved, but a decision may create new law, and perhaps constraints, on EPA’s ability to use these types of unilateral administrative emergency orders.

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News Briefs

national news

EPA Proposes Greenhouse Gas Emissions Standards for New Coal-Fired Power Plants

In a move that could put an end to new coal-fired power plants in the U.S., EPA proposed, on March 27, standards to control greenhouse gas (GHG) emissions from new, larger solid fossil fuel-fired units. The proposed rule (40 CFR 60, Subpart TTTT) would apply to units that generate electricity for sale, are larger than 25 megawatts, and commence construction by the *Federal Register* publication date of the rule. The rule would also apply to transitional sources that have already obtained Prevention of Significant Deterioration (PSD) permits but do not start construction within one year of the *Federal Register* publication date. Under the proposed rule, affected units would be required to meet an annual average output limit of 1,000 pounds of CO₂ per gross Megawatt-hour (lb CO₂/MWh). For the first ten years of operation, coal and petroleum coke-fired units would be subject to a less restrictive standard of 1,800 lb CO₂/MWh gross, but, by the 11th year of operation, would be required to install carbon capture and storage to reduce CO₂ emissions. For more information, contact Larry Moon at 512.879.6619 or lmoon@zephyrenv.com.

EPA Delays Rules Controlling Refinery Greenhouse Gases

According to agency sources, EPA will not be able to finalize regulations for control of GHG emissions from refineries until early 2013. This rulemaking is the result of the settlement of a lawsuit between a number of states, environmental groups and EPA, and litigants in the suit have indicated they are working on a revised schedule. For more information, contact Ed Fiesinger at 281.668.7353 or efiesinger@zephyrenv.com.

EPA Proposes Retaining Current Greenhouse Gas Emissions Permitting Thresholds

On March 8, EPA proposed that GHG permitting thresholds for the PSD and Title V Operating Permit programs be kept at current levels, citing that states have not made enough progress in GHG permitting capacity to lower the thresholds at this time. EPA also proposed to authorize the implementation of plant-wide applicability limitations and synthetic minor limitations for GHG emissions. For more information, contact David Mahler at 410.312.7909 or dmahler@zephyrenv.com.

Sources in Limbo with Conflicting Boiler MACT Directives

On January 9, the U.S. District Court for the District of Columbia vacated EPA's stay of the industrial boiler maximum achievable control technology (MACT) rule. EPA issued the rule on March 21, 2011, but subsequently stayed the rule on May 18, 2011 in order to reconsider certain aspects of the rule. As a consequence of the Court's action, any industrial boiler or furnace that is located at a major source of hazardous air pollutants (HAPs) and that commenced construction or reconstruction after June 4, 2010 must presently comply with emission limitations in the rule. In a separate action in December 2011, EPA proposed significant amendments to the rule and new compliance dates based on the final amended rule publication date, rather than March 21, 2011. For more information, contact David Mahler at 410.312.7909 or dmahler@zephyrenv.com.

EPA Issues "No Action Assurance" for Boilers Subject to Area Source MACT Rule

On March 13, EPA issued a No Action Assurance (NAA) to owners/operators of existing industrial, commercial, and institutional boilers at area sources of HAPs, stating that it would not pursue enforcement action for failure to complete a boiler tune-up required under a work practice or management practice standard by the MACT standard's compliance date of March 2. (Many facilities with older affected boilers had indicated to EPA that it was not possible to meet this deadline.) In addition, EPA's December 2011 proposed reconsideration of the final Area Source Boiler MACT Rule would provide affected sources with an additional year to demonstrate initial compliance with work practice or management practice standards (including boiler tune-ups). For more information, contact Lou Corio at 410.312.7912 or lcorio@zephyrenv.com.

President Nixes Keystone Pipeline as Construction Moves Forward

On January 18, President Obama denied TransCanada Corporation's application to build the northern portion of the Keystone XL pipeline — a project that would have carried oil 1,700 miles from the tar sands of Canada to refineries in Port Arthur, Texas — citing insufficient

time to fully assess the project's environmental impacts. The Obama Administration, however, left the door open for TransCanada to reapply, and the company has indicated that it intends to do so even though the review clock would restart. In the meantime, TransCanada is moving forward with construction of the southern portion of the pipeline that will transport oil from storage in Oklahoma to Texas refineries. For more information, contact Eric Quiat at 512.579.3823 or equiat@zephyrenv.com.

EPA to Reconsider Air Toxics Rules for Chemical Manufacturing Area Sources

On January 30, EPA announced it will be reconsidering aspects of its National Emission Standard for Hazardous Air Pollutants for Chemical Manufacturing Area Sources including sections related to malfunctions, startups and shutdowns; leak inspections; and the covering of vessels. The current rule, issued in 2009 affects nine area source categories in the chemical manufacturing sector including Agricultural Chemicals and Pesticides Manufacturing, Cyclic Crude and Intermediate Production, Industrial Inorganic Chemical Manufacturing, Industrial Organic Chemical Manufacturing, Inorganic Pigments Manufacturing, Miscellaneous Organic Chemical Manufacturing, Plastic Materials and Resins Manufacturing, Pharmaceutical Production, and Synthetic Rubber Manufacturing. Under the proposed changes, existing area sources of HAPs would have until October 29 to comply. For more information, contact Ellen Ward at 512.879.6634 or eward@zephyrenv.com.

EPA Issues Air Toxics Standards for PVC Manufacturing

On February 13, EPA issued new major source and area source air toxics emission standards for polyvinyl chloride and copolymers production facilities, replacing the previous rule issued in July 2002. The new rule focuses on the control of emissions of vinyl chloride, di-benzo dioxins and furans, and hydrogen chloride from process vents, stripped resin, equipment leaks, wastewater, heat exchangers and storage vessels. For more information, contact Ellen Ward at 512.879.6634 or eward@zephyrenv.com.

state news

Court Vacates EPA Rejection of Texas Pollution Control Air Permitting Rules

On March 26, the U.S. Court of Appeals for the Fifth Circuit vacated EPA's disapproval of the TCEQ's standard air permit pollution control projects, remanding the rules to EPA with instructions that EPA reconsider these regulations and approve or disapprove them most expeditiously. For more information, contact David Cabe at 512.879.6644 or dcabe@zephyrenv.com.

Texas Railroad Commission Requires Disclosure of Hydraulic Fracturing Chemicals

In December 2011, the Texas Railroad Commission issued a new rule requiring oil and gas producers to disclose the chemicals used in hydraulic fracturing and register these chemicals at the

FracFocus.org website. The regulation applies to hydraulically fractured wells which receive initial drilling permits on or after February 1, 2012. For more information, contact Dan Mueller at 512.579.3844 or dmueller@zephyrenv.com.

Leadership Positions Changing at TCEQ

Toby Baker, the policy and budget advisor to Texas Governor Rick Perry on energy, natural resources and agriculture issues has been appointed by the governor as a Commissioner of the TCEQ, effective April 16. Filling the spot held by outgoing Commissioner Buddy Garcia, Mr. Baker's term on the Commission will expire August 31, 2017. Also, on March 7, the Commission named Zak Covar the Agency's new executive director (ED), effective May 1. Mr. Covar replaces the outgoing ED, Mark Vickery, who is retiring from state government after 25 years of service. For more information, contact David Cabe at 512.879.6644 or dcabe@zephyrenv.com.

Texas Supreme Court Recognizes Property Interest in Groundwater in Place

In a landmark decision on groundwater rights, the Texas Supreme Court, on February 24, anonymously ruled that a landowner owns the groundwater under his land "in place" as a property right that cannot be taken for public use without adequate compensation. The decision is likely to have wide-ranging effects for landowners' rights, as well as impacts on the regulation of groundwater by the state's 96 established groundwater conservation districts. For more information, contact Dan Mueller at 512.579.3844 or dmueller@zephyrenv.com.

TCEQ Proposes Permit by Rule for Gas-Fired Combined Heat and Power Units

On June 17, 2011 the Texas Governor signed House Bill 3268, which requires that the TCEQ develop a standard permit or permit by rule (PBR) for authorizing natural gas engines and turbines used in combined heat and power (CHP) systems. As a result, the TCEQ is proposing new PBR Section 106.513 to authorize CHP units. The new PBR will provide CHP operators an alternative to permitting these units under the existing electric generation unit standard permit. For more information, contact Eric Quiat at 512.579.3823 or equiat@zephyrenv.com.

Ohio EPA Issues Air Emissions General Permit for Shale Oil and Gas Operations

On February 1, the Ohio EPA issued an air emissions general permit (GP12) for shale oil and gas production operations. The general permit covers air emission sources found at most shale gas well sites, including engines, generators, dehydrators, tanks and flares. If site qualifying criteria are satisfied, the general permit can be used in lieu of an individual air emissions permit-to-install and operate. For more information, contact David Mahler at 410.312.7909 or dmahler@zephyrenv.com.

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EPA Proposes Houston Area Missed Deadline to Meet 1-hour Ozone Standard

On February 1, EPA proposed to determine that the Houston/Galveston/Brazoria area did not attain the 1-hour ozone standard by the applicable date of November 15, 2007. If finalized as proposed, EPA will reinstate and implement the 1-hour anti-backsliding requirements set by the Courts in 2006. The impact of this EPA action is the possible imposition of Clean Air Act (CAA) Section 185 fees, which were rescinded by the TCEQ in 2010. For more information, contact Ed Fiesinger at 281.668.7353 or efiesinger@zephyrenv.com.

EPA Proposes Ozone Standard Attainment Determinations for Baltimore Area

Based on 2003-2005 monitoring data, EPA proposed in February to determine that the Baltimore severe 1-hour ozone nonattainment area failed to attain the 1-hour ozone national ambient air quality standard (NAAQS) by the regulatory attainment date. However, based on monitoring data since 2006, EPA separately proposed to determine that the Baltimore area is currently attaining the 1-hour ozone NAAQS. If the latter determination is finalized, Maryland will not be required to submit contingency measures related to attainment of the 1-hour ozone NAAQS; however, a Section 185-mandated fee program for major sources of ozone precursors can still be implemented by either Maryland or EPA. Also in February, EPA determined that the Baltimore moderate 8-hour ozone nonattainment area did not attain the 1997 8-hour ozone NAAQS by the mandated attainment date. Therefore, the Baltimore area was reclassified as a serious

8-hour ozone nonattainment area, with an attainment deadline of June 15, 2013. Maryland must submit State Implementation Plan revisions for the Baltimore area to meet CAA requirements for a serious ozone nonattainment area no later than September 30, 2012. For more information, contact Lou Corio at 410.312.7912 or lcorio@zephyrenv.com.

Maryland Releases Initial Report on Marcellus Gas Drilling Assessment

In December 2011, the Maryland Departments of the Environment (MDE) and Natural Resources released the first of a three-part study of drilling in the Marcellus Shale, presenting recommendations regarding sources of revenue and standards of liability for damages caused by exploration and drilling. Most notably, the report recommends the charging of state fees on gas leases, levying of a state-level severance tax, and authorizing the MDE to establish performance bond amounts by regulation. In addition, the report recommends that Maryland “enact a law creating a rebuttable presumption that certain damages occurring close in space and time to exploration and production activities are caused by those activities, and an administrative process for requiring the permittee to remediate the damage, pay compensation, or both.” Part II of the study will outline best practices for all aspects of natural gas exploration and production, and Part III will present findings and recommendations regarding the potential impact of Marcellus Shale drilling in Maryland. To date, the MDE has issued no permits for the use of horizontal drilling and hydraulic fracturing techniques in the Marcellus Shale. For more information, contact Lou Corio at 410.312.7912 or lcorio@zephyrenv.com. ✨

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most impacted by pollution. Of course, the Minister did not have to stay the night. And while I ate a lot of room service meals that week to avoid venturing out, there is a happy ending to this story — lead was phased out from all fuels in Peru two years later.

So, when it comes to working internationally, I believe Mark Twain stated it best when he wrote, “nothing so liberalizes a man and expands the kindly instincts that nature put in him as travel and contact with many kinds of people.” I agree, Mr. Twain. ✨

Robert P. Newman, P.E.
Principal

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The expansion of fracking operations and continued heightened public interest has led to greater regulatory oversight. While many in the industry have already taken voluntary measures like choosing less exotic chemicals in their operations, the future will likely hold even more regulations. One can expect these new regulations to include the disclosure of chemical additives, increased recordkeeping and reporting requirements, narrowed exemptions from underground injection regulations, and increased restrictions on disposal of flowback fluids. ✨

Leonard Dougal and Jacob Arechiga
Jackson Walker L.L.P.

Keeping Things in Perspective

It's common to become self-absorbed in our own world. Living in the United States, where fast food is seemingly available at every corner, it is easy to forget that significant portions of the world's population don't know where their next meal is coming from. Similarly, while here we can get caught up in environmental issues such as developing policy, demonstrating compliance, and engineering actual improvements to human health and the environment, a broader perspective might be in order.

Consider China. All of the environmental challenges here at home pale in comparison to the 50-year long slow motion train wreck that the largest nation on earth has been going through, caused by a combination of disastrous policies, burgeoning population, and a more recent commitment to industrialization. When the Communist Party took power in 1949, one of its first initiatives was to launch "the backyard smelter" campaign, in which some 90 million peasants began smelting steel on a micro scale. Villagers reportedly cut down over 10 percent of China's trees in a matter of months. Most of the produced steel was subsequently found to be unusable. Another failed policy was the "kill the four pests" campaign, in which the government encouraged the people to eradicate rats, flies, mosquitoes, and sparrows. Sparrows were targeted because they ate grain seeds, thus depriving the populace of the fruits of their labors. After two years of killing sparrows it became obvious that sparrows also ate insects — and with hardly any sparrows left the locust population exploded, creating an ecological imbalance that led to the Great Chinese Famine in which tens of millions of people perished.

China entered the 21st century with over a fourth of its land mass a desert and three-fourths of its forests destroyed. Yet with its huge industrializing population, China has become a voracious consumer on a truly global scale. It uses half the world's steel and concrete and burns more coal than the next three biggest coal consumers combined — the U.S., Russia, and India. When the country ran short of scrap metal in early 2004 and began paying premium prices for it, manhole covers disappeared from cities all over the world — Chicago lost 150 in a month.

The Chinese government is certainly aware of the problems — it estimates that 400,000 people die prematurely from respiratory illnesses each year. Four-fifths of China's rivers are too polluted for



fish. Half the population — 600 or 700 million people — drinks water contaminated with animal and human waste.

China is taking tentative steps to address its environmental issues; for example, it has embraced alternative energy approaches, and, in fact, is producing nearly half of the world's solar panels. The rest of the world should definitely be rooting for China to successfully address its environmental problems, which have already become our problems as well. Trash from China can be found on the beaches of Taiwan and Japan, and Chinese power plants have a measurable impact on the air quality in the western United States.

So, while things may not be perfect here at home, we should be thankful that we live where we do. Those of us working in the environmental arena can help our neighbors understand this by pointing to other places in the world, like China, to get some perspective on the state of our environment. ☀

Joe Zupan
President

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2600 Via Fortuna
Suite 450
Austin, Texas 78746

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policies for nuclear waste disposal and lay out a new road map for solving the disposal dilemma. The Commission released its final report in late January 2012, which included several recommendations that will surely stir debate. Acknowledging that DOE is no longer the best institutional home for regulating federal nuclear waste management efforts, the Commission recommended creation of a congressionally-chartered federal corporation to oversee nuclear waste management, to be funded with existing waste disposal fees that ratepayers pay for nuclear-generated electricity. However, some lawmakers believe that it will take a year, and possibly multiple years, to establish this organization.

The Commission also recommended that communities be encouraged to volunteer to host nuclear waste management facilities, while directing the new waste management corporation to approach communities that it believes can meet the siting requirements. In this NIMBY age such a recommendation may seem like folly; however, the disposal site for waste from federal nuclear weapons programs — the Waste Isolation Pilot Plant near Carlsbad, New Mexico — was developed using a consensus-based approach involving EPA and state/local government.

Another of the Commission's recommendations is to develop one or more temporary consolidated storage facilities to receive spent fuel from reactor sites until a permanent repository can be developed. However, as acknowledged by the Commission, such an interim

site would only succeed if surrounding communities could be convinced that it would not become a de facto permanent site. Even if local communities could be swayed, the idea that there would be an additional transportation/storage step along the way to permanent disposal is still unsettling to the general public.

The Commission also recommended re-structuring the fee system such that nuclear utilities would remit only the portion of the annual fee that is appropriated for waste management each year and place the rest in a trust account to be made available when needed. However, this change would mean that the federal government could no longer count the \$750 million total it now collects annually against the federal budget deficit. In light of the recent struggles by Washington to rein in the federal budget deficit, this may be a hard pill to swallow.

Given the federal government's inability to resolve the nuclear waste disposal dilemma over the past 30 years, the average citizen could not be blamed for having little or no confidence that the Commission's recommendations will yield effective solutions. However, it is in everyone's best interest that plan consensus be reached very soon followed by quick action in order to decrease the chances of someday experiencing our own nuclear catastrophe. ✨

Lou Corio
Senior Project Scientist