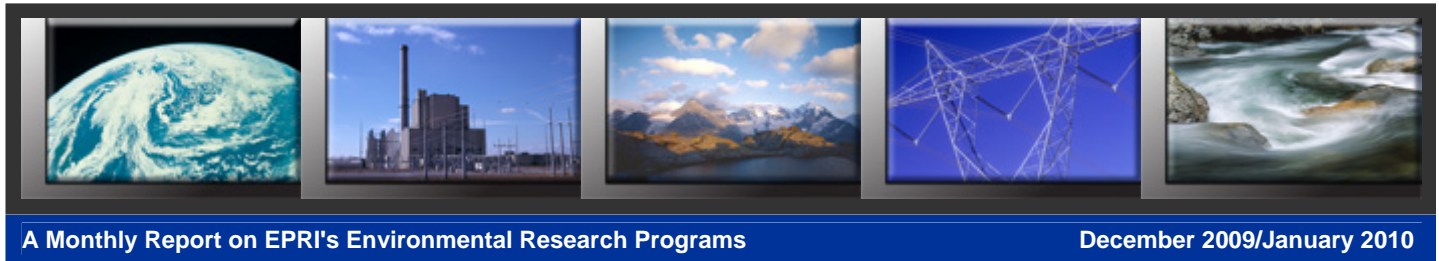


Environment Quick News



Program members can use their epri.com ID and password to download Acrobat PDF files of EPRI technical reports. For assistance, contact the EPRI Customer Assistance Center at (800) 313-3774.

Dear Environment Sector members:

Transmission and distribution (T&D) issues are becoming more prevalent as new lines are built to accommodate generation from remote renewable resource areas or as lines are upgraded to accommodate additional capacity. New meters are being installed as part of the "smart grid," as a result of demand-side management programs and federal stimulus money being designated for this purpose.

As more lines are built and new technology is deployed, we have seen an increasing number of stories in the public media that raise the issue of exposure to electric and magnetic fields. People concerned about lines passing through neighborhoods or near schools are asking questions about exposure to EMF. As new automatic meters are placed on residences, questions are being raised with regard to exposure from the wireless technology involved.

EPRI research can help you address these issues by providing information and facilitating public involvement. For example, we just published an EMF DVD providing general background on EMF issues, which you can use internally or share with the public or regulators. Our transmission line siting methodology—which includes a stakeholder involvement process—can be useful as you plan siting for new lines.

For 2010, we are working with our colleagues in the Power Delivery and Utilization (PDU) Sector to characterize fields associated with new meters and electric vehicles. Our expanded 2010 program in ROW management (Program 57), jointly sponsored by PDU and Environment, contains a body of work that should help your companies address current and emerging environmental issues related to the T&D system.

We fully expect that T&D environmental issues will continue to grow in importance as the electric sector changes over the next decade in response to regulatory trends and new technologies coming into the marketplace.

Best wishes to you all for a happy holiday season.

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Program 42: Air Toxics Health and Risk Assessment

Project to Measure Emissions of CO₂ and Mercury From Coal Fires is in the News

Thousands of wildfires in underground coal deposits may burn up to an estimated 600 megatons of coal (10% of global coal production) per year globally, releasing pollutants and greenhouse gases into the atmosphere. Earlier this year, EPRI launched a pilot project to develop airborne observational methods that can be used to quantify coal wildfire carbon consumption and measure pollutant releases. An [article on the Discovery News website](#) describes project field work at a small fire in the Powder River Basin of Wyoming and Montana, where ground-based measurements identified emissions of about 12 tons of CO₂ and 270 mg of mercury per day. The article notes that, “Measuring the perhaps tens of thousands of coal blazes active in the world will be an arduous process, but the team hopes to speed things up by developing a method to fly over fires in an airplane and measure heat using an infrared camera.” For more information, contact Arnout ter Schure, (650) 855-2281, aterschu@epri.com.

Article Published on Use of Surrogate Surfaces for Understanding Mercury Dry Deposition

S.N. Lyman, et al. “Testing and application of surrogate surfaces for understanding potential gaseous oxidized mercury dry deposition” (E233410), *Environmental Science & Technology*, 2009, 43 (16): 6235–6241, available online at <http://dx.doi.org/10.1021/es901192e>. Methods for measurement of mercury dry deposition are not well developed, and scientific understanding of dry deposition rates and trends is limited. This paper describes the development of a surrogate surface—a cation-exchange membrane—through field and laboratory tests to better characterize its potential use in measuring the dry deposition of gaseous oxidized mercury. For more information, contact Arnout ter Schure, (650) 855-2281, aterschu@epri.com.

Article on Occurrence of Particulate Mercury and Wildfires Published

Finley, B.D., et al. “Particulate mercury emissions in regional wildfire plumes observed at the Mount Bachelor Observatory” (E231171), *Atmospheric Environment*, Vol. 43, Issue 38, December 2009, pp. 6074–6083; abstract available at <http://dx.doi.org/10.1016/j.atmosenv.2009.08.046>. Data gathered at Oregon’s Mount Bachelor Observatory from 2005 to 2007 were analyzed, and 16 periods were identified during which particulate mercury was detected for nine or more consecutive hours. Data analyses suggest that these 16 events were due to regional wildfires in California and Oregon. Asian long-range transport of mercury was not a source of the particulate mercury, although local U.S. industrial emissions may possibly have accounted for some of the events as well. For more information, contact Arnout ter Schure, (650) 855-2281, aterschu@epri.com.

Program 91: Assessment Tools for Ozone, Particulate Matter, Regional Haze and Atmospheric Deposition

Understanding the Organic-Mass-to-Organic-Carbon Ratio

Stephanie Shaw presented results from a study of the organic-mass-to-organic-carbon (OM/OC) ratio at the recent American Association for Aerosol Research Annual Conference in Minneapolis, MN. Her paper, “OM/OC Ratio Inferred from Speciated PM_{2.5} Measurements in the Southeastern United States,” uses data from sites in the Southeastern Aerosol Research and Characterization (SEARCH) network. The OM/OC ratio is used in visibility and source attribution studies, and is necessary in mass closure calculations of particulate matter (PM) components and for determining reconstructed mass and reconstructed light extinction. The median SEARCH OM/OC ratios vary greatly from site to site: the lowest values (down to 1.6) occur at inland sites in Birmingham and Atlanta and the highest values (up to 2.2) at coastal Gulf of Mexico sites. The study points out the importance of including sea salt and particle-bound water in OM/OC calculations. It agrees with other studies that show that the historically used OM/OC value of 1.4 is too low in many cases. For more information, contact Stephanie Shaw, (650) 855-2353, sshaw@epri.com.

Research Compares Toxicity of Anthropogenic and Biogenic Particles

See story under Program 92.

Webcast on Secondary SO_x and NO_x Standards

On Nov. 2, EPRI Air Quality staff conducted a webcast to bring member companies up to date on the possible secondary National Ambient Air Quality Standard (NAAQS) for SO_x and NO_x. The webcast covered

- federal timelines leading to the policy assessment and rulemaking,
- possible structure of a secondary NAAQS for SO_x and NO_x based on an ecological indicator,
- review of comments provided to the U.S. Environmental Protection Agency by EPRI, and
- discussion of proposed future EPRI research relevant to the assessment.

Materials from the webcast have been made available to Program 91 sponsors. For more information, contact Naresh Kumar, (650) 855-8758, nkumar@epri.com; Eladio Knipping, (202) 293-2691, eknippin@epri.com; or Stephanie Shaw, (650) 855-2353, sshaw@epri.com.

Evaluating Receptor Modeling Techniques for Particulate Matter

Using speciated PM_{2.5} data generated from a state-of-the-art chemical transport model, EPRI researchers evaluated the use of several receptor models for regional-scale applications. In addition, the researchers developed a method for evaluating the “goodness” of results from the Positive Matrix Factorization (PMF) receptor model, widely used for modeling the relationship between emissions sources and atmospheric concentrations of particles. However, PMF model usage is highly subjective since it involves tweaking several parameters to find a solution. In this study, PM_{2.5} data were generated by the Community Multiscale Air Quality (CMAQ) model. Using the simulated data for the analysis, the researchers developed a more objective basis for elucidating the strengths and weaknesses of using PMF modeling. Two papers describing the work and giving specific recommendations to improve PMF software and modeling strategies have been accepted for publication in the *Journal of the Air and Waste Management Association*:

- Lowenthal, D. H., et al., “Evaluation of Regional-Scale Receptor Modeling.” In press.
- Chen, L.-W. A., et al., “Towards Effective Source Apportionment Using Positive Matrix Factorization: Experiments with Simulated PM_{2.5} Data.” In press.

For more information, contact Eladio Knipping, (202) 293-2691, eknippin@epri.com, or Naresh Kumar, (650) 855-8758, nkumar@epri.com.

Pilot Measurements Complete for Bioaerosol Project

EPRI’s Technology Innovation project on bioaerosols in the atmosphere recently completed a pilot study to field-test project methods and optimize sampling protocols. The project will determine the contribution of bioaerosols, including pollen, fungi, and bacteria, to both coarse and fine PM in the Southeast using a combination of novel biochemical markers for these species coupled with advanced microscopic techniques. Pilot sampling was carried out at two sites in the Southeastern Aerosol Research and Characterization Study (SEARCH) network—Jefferson St. (Atlanta) and Yorkville, Georgia. Both 24-hour and 8-hour samples were collected on three days each in September and October. Results of the pilot study are expected in the first quarter of 2010. For more information, contact Annette Rohr, (650) 855-2765, arohr@epri.com or Stephanie Shaw, (650) 855-2353, sshaw@epri.com.

Program 92: Assessment of Air Quality Impacts on Health and the Environment

Research Compares Toxicity of Anthropogenic and Biogenic Particles

The Secondary Particulate Health Effects Study (SPHERES) project investigated how differences in the chemistry of biogenic and anthropogenic secondary organic aerosols (SOA) affect toxicity. Using the project’s animal exposure chamber, researchers looked at the toxicity of inhaled SOA in rats and mice. The study found that neither SOA atmosphere induced lung inflammation. Adding SO₂ to the biogenic atmosphere resulted in a slight increase in cellular damage; in contrast, the atmosphere with no SO₂ added showed a higher incidence of cellular damage in the anthropogenic atmosphere. Overall, the most important finding thus far is that the

responses from the SOA atmospheres, in the absence or presence of SO₂, were significantly lower than those found in studies for gasoline or diesel engine exhaust. Findings were presented at the 28th Annual conference of the American Association for Aerosol Research in late October. Two technical papers on different aspects of the SPHERES project have been written:

- McDonald, J. D., et al., "Cardiopulmonary Response to Inhalation of Biogenic Secondary Organic Aerosol," *Inhalation Toxicology*, in press.
- Campen, M. J., et al., "A Comparison of Vascular Effects from Complex and Individual Air Pollutants Indicates a Role for Monoxide Gases and Volatile Hydrocarbons," *Environmental Health Perspectives*, under review.

For more information, contact Eladio Knipping, (202) 293-2691, eknippin@epri.com, or Annette Rohr, (650) 855-2297, arohr@epri.com.

EPRI Comments on Risk Assessment for Particulate Matter Air Quality Standards

Annette Rohr and Ron Wyzga recently provided comments to the U.S. Environmental Protection Agency on the External Review Draft of the Risk Assessment to Support the Review of the Particulate Matter (PM) Primary National Ambient Air Quality Standards (NAAQS). Comments focused on two main issues, the first being whether the uncertainty analysis conducted for the risk assessment was adequate, given that only a single dose-response function from a single study was used. The second significant issue was with the assumption that, for the risk assessment, all PM should be treated equally in terms of health impacts. For more information, contact Annette Rohr, (650) 855-2297, arohr@epri.com, or Ron Wyzga, (650) 855-2132, rwyzga@epri.com.

Pilot Measurements Complete for Bioaerosol Project

See story under Program 91.

GLOBAL CLIMATE CHANGE

[Visit the Global Climate Webpage](#)

Global Climate Change Team Launches New Website

The Global Climate Change team's newly redesigned website is now available on epri.com. The new Global Climate Change Policy Resource Center website replaces the existing site while maintaining its current web address, www.epri.com/globalclimate/. The new site features a homepage that highlights the latest research from the GCC team and provides easier and better organized access to research results, publications, events, and staff information. For more information, contact Tom Wilson, (650) 855-7928, twilson@epri.com.

Global Climate Change Area News

EPRI Board Hears Overview on Climate Policy Research

On Nov. 18, Global Climate Change Area staff gave EPRI's Board of Directors an update on international climate policy and emission offsets. The presentation, "Why Copenhagen *Still* Matters: International Aspects of Domestic GHG Compliance," described how international actions will help shape the U.S. energy future. The presentation covered the following topics:

- Delavane Diaz, "Implications of Offset Policy for Electric Company Strategy."
- Steven Rose, "Forestry and Agricultural Offsets: Reassessing Potential Supply."
- Geoff Blanford, "International Offsets: The Potential Role of the Energy Sector."
- Richard Richels, "International Climate Policy: A 'Second Best' Solution for a 'Second Best' World?"

The [presentation](#) may be downloaded from the Global Climate website. For more information, contact Delavane Diaz, (650) 855-2332, ddiaz@epri.com, Steven Rose, (202) 293-6183, srose@epri.com, Geoff Blanford, (650) 855-2126, gblanford@epri.com or Richard Richels, (202) 293-2160, rrichels@epri.com.

The Next Generation of Scenarios for Climate Change Research and Assessment

Steven Rose participated as part of an interdisciplinary team of researchers in the development of a new process for creating scenarios of plausible futures to develop insights into some of the most important climate questions confronting the international community. Advances in climate change observations and science are providing a clearer understanding of the earth's climate system, its inherent variability, its response to human and natural influences, and the risks presented to ecosystems, natural resources, and human well-being. These risks depend on large uncertainties about what technologies will be adopted, how consumption patterns will evolve, whether economic development will be sustainable and broadly extended in the developing world, and what measures and policies will be adopted to address climate change, as well as how the climate, atmosphere, and ecosystems will respond. A paper is due to appear shortly in the journal *Nature*. For more information, contact Steven Rose, (202) 293-6183, srose@epri.com.

Program 102: Global Climate Policy Costs and Benefits

EPRI Climate Research Presented at London Energy Forum Workshop

Tom Wilson and Steven Rose presented EPRI's global climate research at the London Energy Forum's Climate Policy and Risk Assessment Workshop, held Nov. 9–10 in London. This workshop was the third in an annual series of seminars looking at model-based insights on the impacts of market risk and policy uncertainty in energy investment, with particular emphasis upon the risks posed by climate change policy. Wilson's talk was titled, "[U.S. Climate Policy: Offsets 'R Us?'](#)" Rose spoke on "[Climate Policy Design and Forest Carbon Sequestration: Transitioning to a Global Forest Carbon Market.](#)" For more information, contact Tom Wilson, (650) 855-7928, twilson@epri.com, or Steven Rose, (202) 293-6183, srose@epri.com.

Accounting for the Benefits of GHG Emissions Reductions in Federal Regulations

Steven Rose was invited to give a presentation on the social cost of carbon (SCC) as part of the Environmental Defense Fund's Climate Economics Seminar Series on Nov. 24. The SCC is the marginal cost (or benefit) of an incremental increase (or reduction) in carbon dioxide emissions. His presentation, "[The Role of the Social Cost of Carbon in Climate Policy](#)," discussed the current need for and use of the SCC in the U.S. regulatory environment, the state of the art in estimating the SCC, economic principles for application, a critique of currently proposed U.S. government estimates, and thoughts on the path forward. For more information, contact Steven Rose, (202) 293-6183, srose@epri.com.

Study on the Implications of Delayed International Cooperation for Reduced Climate Change

Stanford University's Energy Modeling Forum recently completed a two-year multi-model international study evaluating the climate, technology, and cost implications of hypothetical scenarios of delayed accession of blocks of countries for various climate pathways and long-run targets. Geoff Blanford, Richard Richels, and Tom Rutherford participated as one of the modeling teams, while Steven Rose and Francisco de la Chesnaye participated as invited experts, and in evaluating and synthesizing results and insights across models. The study also included a U.S.-only scenario exercise focused specifically on cross-model comparison of costs and mitigation portfolios for a range of domestic greenhouse gas reduction targets. The study, including individual papers from each modeling team, has been published in a [special issue](#) of the journal *Energy Economics* (Vol. 31, Supplement 2). For more information, contact Geoff Blanford, (650) 855-2126, gblanford@epri.com; Francisco de la Chesnaye, (202) 293-6347, fdelachesnaye@epri.com; Richard Richels, (202) 293-2160, richels@epri.com; or Steven Rose, (202) 293-6183, srose@epri.com.

Program 103: Greenhouse Gas Reduction Options

EPRI Participates in United Nation's Framework Convention on Climate Change

John Novak and Adam Diamant attended the United Nation's Framework Convention on Climate Change (UNFCCC) 15th Conference of Parties (COP) in Copenhagen, Denmark in December 2009. This annual international event brings together virtually all the nations of the world for ongoing negotiations on the development of an international policy architecture to reduce greenhouse gas (GHG) emissions and plan for actions that may be necessary to adapt to a changing climate. Both Diamant and Novak participated in a variety of "side events" where they discussed results of recent EPRI research programs related to climate change mitigation. For more information, contact John Novak, (202) 293-6180, jnovak@epri.com, or Adam Diamant, (510) 260-9105, adiamant@epri.com.

Workshop on Operating Flexibility of Power Plants With Carbon Capture and Storage

Tom Wilson participated in the International Energy Agency (IEA) workshop on Flexible Operation of Coal Plants with CCS, held Nov. 11–12 at Imperial College in London. His presentation, “Value of Flexible Operation of Advanced Coal Plants with CCS,” described EPRI’s work estimating the economic value of flexibility over time in several U.S. regions. Wilson’s presentation focused on the additional flexibility that could be offered by regaining capacity at a coal plant with CCS by bypassing carbon capture equipment or by storing interim products on site during peak power demands. Having this flexibility may be economically attractive when electricity prices are high and CO₂ prices are low and it may also provide significant value in terms of ramp-up speed. Flexibility value depends on plant configuration, region, electricity prices, generation needs, and other factors. Presentation slides from the workshop may be downloaded from IEA’s Greenhouse Gas R&D Program [website](#). For more information, contact Tom Wilson, (650) 855-7928, twilson@epri.com.

LAND AND GROUNDWATER

Program 49: Coal Combustion Products—Environmental Issues

New Report on Sampling and Analysis Procedures for Boron

Sampling and Analysis Procedures: Boron (1019024) will be available soon on epri.com. Boron is a common constituent in fly ash leachate, and accurate analytical methods are the most critical aspect related to reporting and interpretation of data. This report discusses the most widely accepted analytical techniques for the determination of the element boron as it occurs in liquids and solids at coal combustion product management sites. For more information, contact Ken Ladwig, (262) 754-2744, keladwig@epri.com.

Program 50: Manufactured Gas Plant Site Management

EPRI Manufactured Gas Plant 2010 Symposium to Be Held at End of January

EPRI is pleased to present the next in its highly successful series of manufactured gas plant (MGP) symposia. The 2010 Manufactured Gas Plant Symposium, to be convened in San Antonio, TX, on Jan. 27–29, will cover a wide range of current topics related to MGP site management and will present advances in the technologies used to investigate and clean up former MGP sites. Presentations will provide the latest information—including case studies—on the data, methods, and tools needed for cost-effective and environmentally protective management of MGP sites. The [full agenda and registration information](#) are available under Events on epri.com. For more information, contact Jeff Clock, (845) 608-0642, jclock@epri.com, or Jim Lingle, (414) 355-5559, jlingle@epri.com.

Program 59: Power Plant Toxics Characterization

PISCES Database v2009a Now Available

PISCES Database v2009a (1017983). The PISCES Database web application version 2009a provides users access to an online database of nearly 300,000 measurements of trace chemicals in both internal and discharge streams associated with fossil fuel-fired power plants. The Database is a compendium of information on power plant toxics. It was created by compiling information from a thorough literature survey, and it is continually updated with results from ongoing field tests by EPRI, the U.S. Dept. of Energy, the U.S. Environmental Protection Agency, and other institutions worldwide. For more information, contact Naomi Goodman, (650) 855-2193, ngoodman@epri.com.

WATER AND ECOSYSTEMS

Program 53: Water Quality Criteria Development and Assessment

EPRI Report Evaluates Relationship Between Arsenic Bioaccumulation and the Concentration of Arsenic in Water

Evaluation of U.S. Environmental Protection Agency’s Arsenic Ambient Water Quality Criteria: Speciation and Bioaccumulation Issues (1020304). This Technical Update presents a summary of laboratory experiments designed to better define the relationship between arsenic bioaccumulation and the concentration of arsenic in

water, taking into account the form of arsenic species accumulated in the aquatic organisms involved. These results will be used to develop a more comprehensive understanding of the complex interactions of bioaccumulation and biotransformation of arsenic in freshwater and marine fish and shellfish sought for human consumption. Results will also provide a scientific basis for a possible revision of the U.S. Environmental Protection Agency's arsenic ambient water quality criteria. For more information, contact John W. Goodrich-Mahoney, (202) 293-7516, jmahoney@epri.com.

New Report Compares Standard and New Methods for Dissolved Methylmercury Analysis

Total Dissolved Methylmercury Concentrations in Two Headwater Streams (1020305). Researchers at the University of Illinois have developed a new approach to methylmercury (MeHg) analysis in freshwater samples that is fundamentally different from the current standard method. This Technical Report documents the results to date from the intercomparison of "standard" and "new" methods of dissolved MeHg analysis. This study is unique in that no field-based comparison of these two methods at significant scale has been conducted to date. MeHg is the only form of mercury where concentrations increase with trophic level in aquatic food webs. As a consequence, a direct causal link exists between the levels of MeHg dissolved in water, where it typically accounts for only 10% of the total mercury, and in fish tissues, where it typically accounts for more than 90% of the total mercury. This link makes dissolved MeHg a critical indicator of an ecosystem's potential to attain high fish mercury levels and makes its accurate measurement an essential tool for assessing the effects of anthropogenic mercury deposition. This work will assist members and resource agencies in predicting and interpreting the response of receiving water bodies and fish tissue concentrations to reductions in power plant mercury emissions. For more information, contact John W. Goodrich-Mahoney, (202) 293-7516, jmahoney@epri.com.

Program 54: Fish Protection at Steam Electric Power Plants

New Field Techniques Advance Understanding of Fish Response to Thermal Plumes

A Field Research Design to Study the Response of Fishes to Thermal Plumes (1017944). This Technical Report describes how new technological developments in fish tags and telemetry can advance the understanding of fish response to elevated thermal fields and resolve differences between laboratory experiments and field observation results. The application of high-resolution, three-dimensional telemetry can provide power plants with data on actual thermal exposure and detect real-time responses of fishes across a range of discharge conditions in a natural setting. This technology provides great opportunities for power plant staff to understand the actual behavior effect on communities and populations from heated discharges and improve knowledge previously obtained in a laboratory setting. For more information, contact Robert Goldstein, (650) 855-2154, rogoldst@epri.com.

Program 55: Strategic Water Issues: TMDLs, Availability, Climate

Progress Update: Investigation of Water Resource Trends and Implications for the Electric Power Industry

In a recent webcast, EPRI gave a [mid-project update](#) to members of the Strategic Water Issues program on a two-year study to identify trends in water resources and provide a review of different factors that may lead to changes. The study is designed to relate the importance of trends and causation factors to the operational needs of the electric power industry. The goal of the webcast was to share findings to date and discuss further steps. For more information, contact Robert Goldstein, (650) 855-2154, rogoldst@epri.com.

Progress Update: Stormwater as a Potential Source of Water for Power Plants

EPRI recently provided an [update of a study](#) on the potential use of stormwater by power plants, including possible contaminants, treatment concepts, and regulatory barriers. This Strategic Water Issues program webcast shared progress to date and sought guidance with respect to completion of the study and possible future case studies of individual power plants in different regions of the country. For more information, contact Robert Goldstein, (650) 855-2154, rogoldst@epri.com.

Goldstein Provides Technical Guidance at Water-Energy Nexus Meetings

EPRI's Bob Goldstein was invited to provide expert technical guidance in fulfilling the sponsors' objectives at two meetings on the water-energy nexus, hosted by the Johnson Foundation in Racine, Wisconsin in late

November. The first conference, [Reducing Conflicts at the Water-Energy Interface](#), was convened by The Johnson Foundation to clarify the challenges to U.S. freshwater associated with energy use and energy generation, as part of The Foundation's overall efforts at identifying a path toward freshwater resilience for the United States by 2025. The second meeting, Energy and Water: Research Design Conference, was convened by the Union of Concerned Scientists along with The Johnson Foundation and focused on research needs related to the energy generation portion of the water-energy nexus. For more information, contact Robert Goldstein, (650) 855-2154, rogoldst@epri.com.

Program 56: Effluent Guidelines and Water Quality Management

EPRI Developing Comments on the U.S. Environmental Protection Agency's Proposed Information Collection Request for Effluent Guidelines

EPRI staff are reviewing the U.S. Environmental Protection Agency's (EPA's) proposed [Information Collection Request \(ICR\)](#) for the steam electric power generating industry, as well as EPA's recently released final report [Steam Electric Power Generating Point Source Category: Final Detailed Study Report](#). Working with the Effluent Guidelines and Water Quality Management Program Steering Committee, the program staff will develop and submit comments to EPA before the Dec. 28 deadline. For more information, contact Paul Chu, (650) 855-2362, pchu@epri.com.

New EPRI Report on Integrated Fly Ash Pond Management

[Integrated Fly Ash Pond Management: A Field Study of Five Central United States Pond Systems](#) (1020365).

This Technical Report is directed toward solving new challenges to meeting U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System discharge limits for ammonia and selected metals from coal-fired power plants. Based on field and laboratory studies of fly ash ponds at five operating coal-fired power plants, the report discusses the physical, chemical, and biological processes that occur in fly ash sluicing systems. The report also offers recommendations as to how best to manage the ponds to meet discharge limits, with an emphasis on the management of ammonia, pH, and metals, particularly arsenic and selenium. For more information, contact Mary McLearn, (650) 855-2487, mmclearn@epri.com.

Program 58: Waterpower

Hydropower Highlights

Several hydropower activities have taken place over the last two months:

- On Oct. 14, Doug Dixon and Tom Key presented an [overview of EPRI Waterpower research](#) at the National Hydropower Association Hydraulic Power Committee Fall meeting in Birmingham, AL.
- The EPRI/New York Power Authority (NYPA) team completed installation, deployment, and calibration of the Acoustic Doppler Current Profiler (ADCP) flow monitoring system in the main channel at NYPA's Niagara plant. Underwater and night operations were required to complete this work.
- EPRI initiated a new project in October to look at optimizing hydropower operations at the Niagara plant. The objectives are
 - to better understand existing operations, including unit characteristics using volumetric data;
 - to develop real-time indicators of energy value; and
 - to improve overall operating strategy during normal and contingency operations at Niagara's Robert Moses and Lewiston plants.

The public benefits from this project are a better understanding of how to measure and optimize the use of water resources with changing generation mix, and identification of the most cost-effective ways to harvest existing waterpower resources under different operating conditions.

For more information, contact Tom Key, (865) 218-8082, tkey@epri.com.

Webcast Kicks Off American Eel Interest Group

EPRI kicked off the new American Eel Interest Group in a Nov. 3 webcast that

- reviewed the Terms of Reference for the American Eel Interest Group;

- initiated the exchange of information related to regulatory, management, and scientific developments;
- alerted members regarding upcoming meetings and conferences;
- reported on the 7th annual meeting of the Canadian Eel Science Working Group;
- identified member issues, concerns, and needs; and
- initiated planning for the annual American Eel Interest Group workshop.

The interest group is a forum for participants to acquire and exchange information on American eel biology, ecology, and management to facilitate the protection of this species at electricity generating facilities. For more information, contact Paul Jacobson, (410) 489-3675, pjacobson@epri.com.

Comparison Tests of Methods for Measuring Flow in Short-Converging Hydroelectric Plant Intakes

Flow Measurements at St. Lawrence Power Plant: Acoustic Scintillation Flow Meter Comparison Tests (1020327). Accurate flow measurements at low-head hydroelectric plant intakes are needed to evaluate turbine efficiency and optimize plant and system performance. This Technical Report describes comparison tests of methods for measuring flow in short-converging hydroelectric plant intakes. There are currently no methods for this application accepted by industry testing codes. The tests compared acoustic scintillation, a relatively new method, with intake current meters. For more information, contact Tom Key, (865) 218-8082, tkey@epri.com.

T&D ENVIRONMENTAL ISSUES

Program 51: T&D Facilities & Equipment: Environmental Issues

Technical Update Published on Leaching of Wood Preservatives From Wood Poles and Prevention Methods to Mitigate Leaching

Treated Wood Planted Post Study: Assessment of Leaching of Various Wood Preservatives from In-Service Wood Poles and Prevention Methods to Mitigate Leaching (1017934). This Technical Update describes the interim results of a planted post study currently under way at the Austin Cary Memorial Forest in Gainesville, FL. The purpose of this research is to examine the effectiveness of commercially available prevention methods to reduce preservative migration from treated wood poles, compare the migration of constituents of various wood treatments, and assess the environmental impacts and performance of untreated chestnut. The research team applied commercially available prevention products—two BioTrans field liners and a North Pacific (NOR PAC) fiberglass sleeve—to some of the posts. Another post treated with chromated copper arsenate (CCA) had also undergone a post-treatment liquid fixation process. Preliminary observations are included for posts treated with CCA, copper naphthenate, ammoniacal copper quat (ACQ Type B), pentachlorophenol, or creosote, as well as for untreated chestnut posts. For more information, contact Mary McLearn, (650) 855-2487, mmclearn@epri.com.

Program 60: EMF Health Assessment and Radio-Frequency Safety

[Visit the EMF Health Assessment and RF Safety Public Webpage](#)

First DVD in EMF Educational Series Released

EMF Educational Series, Part 1: EMF Basics; The Power System; EMF Exposure (1019009). Electric power company personnel are called on to deal with EMF health issues, whether in siting and permitting processes or in responding to inquiries from the public. The turnover of staff responsible for EMF issues at electrical power companies requires that new personnel be able to come up to speed on the subject as rapidly as possible. This DVD presents instruction on the physical fundamentals of electric and magnetic fields, how electrical power is transported from the generating station to the residential customer or other end user, the sources of EMF exposure, and a summary of data on EMF exposure levels. The instruction is designed to enable the viewer to communicate clearly in response to questions about EMF. For more information, contact Rob Kavet, (650) 855-1061, rkavet@epri.com.

Report Published on Features of Line Worker Boots That Offer Greatest Insulation and Resistance to Breakdown From Contact With High Voltage

[Measured Breakdown Voltage and Leakage Current of Line Worker Boots](#) (1019012). The research in this report describes electrical characteristics of line worker boots, which play an important part in insulating line workers from high voltage. The report describes features of work boots that offer the greatest insulation and resistance to breakdown in the inadvertent event of contact with high voltage. Particularly noteworthy were the effects of moisture and sole construction: dry conditions and unisole construction optimized conditions that prevent breakdown. The statistical distributions generated from the sample are appropriate for integration into risk analyses for workplace hazards, such as analyses to develop improved grounding practices. For more information, contact Rob Kavet, (650) 855-1061, rkavet@epri.com.

OCCUPATIONAL HEALTH AND SAFETY

Program 62: Occupational Health and Safety

Progress Report on Fleet Vehicle Ergonomic Research

[Ergonomics Research for the Electric Power Industry on Fleet Vehicles](#) (1017995). This interim Technical Report describes the status of EPRI ergonomic research on utility fleet vehicles. The overall goal is to develop a method for utilities to specify, select, and purchase fleet vehicles that can be used and maintained safely, productively, and with minimal risk of injury by affected workers. This progress report describes ergonomics issues associated with electric utility vehicle ingress/egress, storage and access, mobile information technology, cab seating, vision and lighting, and safety and security. For more information, contact Gabor Mezei, (650) 855-8908, gmezei@epri.com.

ENVIRONMENT FEDERAL HIGHLIGHTS (Washington D.C. Office, John Novak)

For more information on the items below, contact John Novak, 202-293-6180, jnovak@epri.com.

November Briefings on the 2009 Update to the Prism/MERGE Analysis

On Nov. 9, Bryan Hannegan and John Novak provided a briefing on the 2009 update to the Prism/MERGE analysis to staff from two Department of Energy offices: the Office of Policy and International Affairs, and the Office of Energy Efficiency and Renewable Energy. On Nov. 12, Bryan Hannegan and Barbara Tyran briefed the staff of the White House Council on Environmental Quality and the Office of Science and Technology Policy on the update. On Nov. 18, John Novak presented the update at the Fall Corporate Environmental, Health & Safety Management Roundtable at the National Press Club. The Roundtable was formed to help companies better manage environmental, health, and safety (EH&S) programs by maintaining an information exchange forum and sharing successful EH&S management techniques.

EPRI Participation in International Climate Meetings

John Novak attended the Nov. 2–6 meetings of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol and the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention in Barcelona, Spain. The groups continued negotiations with the goal of reaching a comprehensive agreement in Copenhagen in December. During the session, it became clear that the negotiations would continue on two tracks: the Kyoto Protocol track, and a track of Long-Term Cooperative Action under the Convention. It also became apparent that the negotiators would not adopt a legally binding agreement in Copenhagen. Instead, the goal is likely to reach agreement on a “politically binding” document that leads to a legally binding agreement in 2010. Mr. Novak participated in side events and meetings with international business, agencies, and delegates and with members of the U.S. delegation to provide input on issues and to provide information and links to EPRI research and projects.

Coal Combustion Product Studies

On Nov. 10, Ken Ladwig, EPRI Senior Project Manager, and John Novak met with staff from the office of Rep. Markey (D-MA). Mr. Ladwig presented slides describing “Recent EPRI Research on Sustainable Management

of Coal Combustion Products.” The [presentation](#) can be downloaded on EPRI’s coal combustion product management research website at www.epri.com/ccp.

New Supplemental Project Opportunities

Program 103: Greenhouse Gas Reduction Options

- [Improving Emission Offset Estimates and Understanding Their Use as a Compliance Option under Climate Policies](#) (1020530).

For a complete list of all active Environment Supplemental Project Opportunities, click [here](#).

New Marketing Communications

Environment Sector

- [Select Reading List on EPRI Environment Research for the Electric Power Industry](#) (1020258). This index is a list of selected resources on key environmental topics and EPRI research, suitable for use in new-hire training, cross training, or continuous improvement. Organized by program, it gives members a sampling of the vast library of technical information available to them as a benefit of EPRI membership. To view an abstract of these documents, click on any of the titles or download them using the product ID number at www.epri.com.

Program 42: Air Toxics Health and Risk Assessment

- [Environmental Impacts of Uncontrolled Coal Fires](#), Issue Brief (1020325)

Program 55: Strategic Water Issues: TMDLs, Availability, Climate

- [Ohio River Basin Trading Project – Quarterly Update, Fall 2009](#) (1020522)
- [Ohio River Basin Trading Project: Frequently Asked Questions](#) (1020419)

Upcoming Events

* denotes EPRI sponsored or cosponsored event

Environment Sector

*** Webcast: Energy Sustainability Interest Group: Action Research – Sustainable Behavior Project Update**

Jan. 6, 1:00 p.m. Eastern/10:00 a.m. Pacific. Contact: Todd Maki, (650) 855-2162, tmaki@epri.com. For logistics: Kitty Vroom, (650) 855-2255, kvroom@epri.com. Open to members of the Energy Sustainability Interest Group.

*** Webcast: Energy Sustainability Interest Group: Public Service of New Mexico**

Jan. 14, 1:00 p.m. Eastern/10:00 a.m. Pacific. Contact: Todd Maki, (650) 855-2162, tmaki@epri.com. For logistics: Kitty Vroom, (650) 855-2255, kvroom@epri.com. Open to members of the Energy Sustainability Interest Group.

*** Environment Sector and Area Council Advisory Meetings**

Mar. 15–18, Orlando, FL. Contact: Marsha Grossman, (650) 855-8760, mgrossma@epri.com.

*** Environment Sector and Area Council Advisory Meetings**

Oct. 11-14, San Antonio, TX. Contact: Marsha Grossman, (650) 855-8760, mgrossma@epri.com.

Air Quality

American Meteorological Society 90th Annual Meeting

Jan. 17-21, Atlanta, GA. Contact: Naresh Kumar, (650) 855-2990, nkumar@epri.com. More information is available at the [event website](#).

***EUEC 2010—The 13th Annual Conference & Expo**

Feb. 1–3, Phoenix, AZ. Contact: Naresh Kumar, (650) 855-2990, nkumar@epri.com. More information is available at the [event website](#).

AAAR Specialty Conference—Air Pollution and Health: Bridging the Gap from Sources to Health Outcomes

Mar. 22–26, San Diego, CA. Contact: Naresh Kumar, (650) 855-2990, nkumar@epri.com. More information is available at the [event website](#).

Remediation of Chlorinated and Recalcitrant Compounds

May 24–27, Monterey, CA. Contact: Leonard Levin, (650) 855-7929, llevin@epri.com. More information is available at the [event website](#).

A&WMA 103rd Annual Conference & Exhibition

June 22–25, Calgary, Canada. Contact: Naresh Kumar, (650) 855-2990, nkumar@epri.com. More information is available at the [event website](#).

Power Plant Air Pollutant Control “MEGA” Symposium

Aug. 30–Sept. 2, Baltimore, MD. Contact: Leonard Levin, (650) 855-7929, llevin@epri.com. More information is available at the [event website](#).

American Geophysical Union 2010 Fall Meeting

Dec. 13–17, San Francisco, CA. Contact: Stephanie Shaw, (650) 855-2353, sshaw@epri.com.

Global Climate

*** 15th Annual EPRI Global Climate Change Research Seminar**

May 18–19, Washington, DC. Contact: Christina Kemp, (650) 855-2044, ckemp@epri.com.

Land and Groundwater

*** EPRI MGP 2010 Symposium**

Jan. 27–29, San Antonio, TX. Contact: Jeff Clock, (845) 608-0642, jclock@epri.com, or Jim Lingle, (414) 355-5559, jlingle@epri.com. EPRI received 83 abstracts and has chosen the most interesting and technically innovative for platform sessions, with the remainder as poster sessions. Tabletop displays will also be included. Please register early since the symposium is likely to be overbooked. More information is available at the [event website](#).

EUEC 13th Annual Energy & Environment Conference

Feb. 1–3, Phoenix, AZ. Contact: Naomi Goodman, (650) 855-2193, ngoodman@epri.com. More information is available at the [event website](#).

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May 24–27, Monterey, CA. Contact: Leonard Levin, (650) 855-7929, llevin@epri.com. More information is available at the [event website](#).

Power Plant Air Pollutant Control “MEGA” Symposium

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Water and Ecosystems

*** Webcast: Ohio River Trading Project Quarterly Update**

Feb. 17, time TBD. Contact Katie Vroom, (650) 855-2417, kavroom@epri.com.

*** Workshop on Western Water Availability Constraints on Electric Power**

Feb. 23–24, Albuquerque, NM (Public Service of New Mexico). Contact: Robert Goldstein, (650) 855-2154, rogoldst@epri.com.

*** Webcast: Ohio River Trading Project Quarterly Update**

May 19, time TBD. Contact Katie Vroom, (650) 855-2417, kavroom@epri.com.

T&D Environmental Issues

The Bioelectromagnetics Society 32nd Annual Meeting

June 13–18, Seoul, Korea. Contact: Gabor Mezei, (650) 855-8908, gmezei@epri.com.

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