

TECHNICAL WRITING LISTINGS

K&A has long experience and success securing placement of technical articles in leading energy industry technical publications. Our engineering, marketing, economic & geo-political expertise in the energy industry enables us to ghost write polished articles for our clients that will engage the industry as well as attract prospective customers. K&A remains in contact with the editorial staff of all the major energy & power industry trade publications frequently participating with them at tradeshow and panel presentations.

Our team consists of Technical Writers, Engineers, Economists and Former Editors of Energy & Power Magazines who have developed 10,000+ articles in their career on a range of Power, renewable, wind, solar and broader energy sectors. We also have our own distribution network of 20,000+ energy industry professionals and a 10,000+ social media following.

Here are some more of our older publication written and published for our clients:

Optimized SCR Catalysts Maximize Mercury Removal Co-Benefits

Power | December 2013 | Client: Cormetech

New air emission rules limit the amount of mercury (Hg) air emissions from coal-fired power plants. Many plant owners may find leveraging the Hg removal co-benefits available from SCR Hg oxidation and FGD Hg collection a more attractive option than constructing new equipment or using other expensive mitigation technologies. [Read Full Story...](#)

Big Challenges, Huge Potential

Modern Power Systems | December 2013 | K&A India Market Report

With coal (domestic and imported) continuing to be the country's primary fuel source, the government of India has embarked on ambitious plans to encourage increased coal-fired power generation capacity. However, despite these aggressive plans, capacity additions have been inadequate. This will have to be urgently addressed on a number of fronts to ensure that energy does not become a constraint on India's economic growth aspirations.

The Value Proposition of Circulating Fluidized Bed Technology for the Utility Power Sector

Energetica | November 2013 | Client: Amec Foster Wheeler

Over the past 40 years, Circulating Fluidized Bed (CFB) boiler technology has evolved from a robust industrial boiler technology used to burn difficult fuels in the late 1970s to the successful installation and commercial operation in 2009 of the world's largest CFB boiler rate at 460 MWe. Established benefits of improved efficiencies, reduced emissions, fuel flexibility and lower costs all combine making CFB technology a highly competitive option for large-scale utility applications. [Read Full Story...](#)

SCR Catalyst Management: How to reduce catalyst lifecycle cost, improve reliability

Combine Cycle Journal | October 2013 | Client: Cormetech

Driven by the current regulatory climate and the growing dependency on natural gas for base-load electric generation, the majority of gas-plant fleets have made broad investments in selective catalytic reduction (SCR) systems. The successful operation of these systems requires monitoring, routine preventive-maintenance inspections, and periodic evaluations of the catalyst. [Read Full Story...](#)

Practical Considerations for Converting Boilers to Burn Gas

Power | October 2013 | Client: CCA Combustion Technologies

The enormous reserves of natural gas at comparatively low prices and increasing regulatory pressure to reduce emissions from coal-fired generation combine to make natural gas today's fuel of choice. What happens to existing coal-fired plants? The preferred solution is to "refuel" with natural gas. [Read Full Story...](#)

A land of both opportunities and challenges

Power Engineering International | September 2013 | K&A Vietnam Market Report

For the past decade Vietnam has witnessed GDP growth in excess of 7 per cent, but this has not been matched by an increase in generation capacity. In order to achieve its ambitious capacity expansion goals Vietnam will need to restructure its regulatory policies, power tariffs and fuel linkages, as well as expand its financing and attract foreign investment, argues Ravi Krishnan. [Read Full Story...](#)

Why CFB scrubbing has stepped out in front

Modern Power Systems | August 2013 | Client: Amec Foster Wheeler

Power plant emissions limits are becoming ever more stringent and regulators are showing increasing interest in expanding the scope of regulation, eg to metals. This regulatory context, combined with concerns about water scarcity, is driving increased interest in dry FGD options, in particular circulating fluidized bed based technologies, which are now proven at large scale - over 520 MWe at Basin Electric's Dry Fork plant - and at a wide range of sulphur levels. CFB is now increasingly favored for retrofit projects in the USA, for example. [Read Full Story...](#)

Addressing the mercury emissions issue

Power Engineering International | June 2013 | Client: Cormetech

As the issue of controlling mercury emissions gains prominence globally, Scot Pritchard, Masashi Kiyosawa and Katsumi Nochi explain how an advanced SCR catalyst is capable of achieving 95 per cent oxidized mercury, and thereby enabling it to be readily captured in a downstream FGD process. [Read Full Story...](#)

Petcoke to Power

Utilities Middle East | June 2013 | Client: Amec Foster Wheeler

While the economies of North America, Europe, and now China are slowing due to a weak global economic recovery, annual GDP in the Middle East is expected to average about 4.5-5.0% over the next five years, driven primarily by the expectation of sustained global oil demand and prices. [Read Full Story...](#)

Petcoke: An Alternative Fuel Source

Power Engineering International | June 2013 | Client: Amec Foster Wheeler

An alarming rise in the Middle East's use of oil to generate power threatens the region's exports of the resource. Robert Giglio says a refinery byproduct can be an economical alternative energy source. [Read Full Story...](#)

New additives address biomass boiler operational issues

Bioenergy Insight | June 2013 | Client: Imerys

While approximately 11% of the world's total energy is provided by biomass combustion, operational problems in biomass boilers can arise from ash-forming elements in fuels. These include silicon (Si), calcium (Ca) and alkali metals, of which potassium (K) is the most prevalent in biomass. [Read Full Story...](#)

CFB Scrubbing: A Flexible Multipollutant Technology

Power | May 2013 | Client: Amec Foster Wheeler

Emission limits for conventional pollutants emitted from power plants—particularly SO₂, NO_x, and particulate matter—continue to tighten around the globe. In the U.S., the Cross-State Air Pollution Rule, although vacated in August 2012, will likely be reworked and eventually promulgated, mandating additional SO₂ reductions. Consequently, plant owners must continue to evaluate the costs and benefits of adding a back-end air quality control system (AQCS) against shutting down noncompliant units. The timing of rule changes makes this a very difficult evaluation. [Read Full Story...](#)

Energy equals economic strength

Power Engineering International | March 2013 | K&A India Power Market Update

A power blueprint combining thermal, hydroelectric, nuclear and renewable generation must urgently be drawn up to ensure India's current energy crisis does not take a toll on the country's economic growth, argues Ravi Krishnan. [Read Full Story...](#)

Power in India: Opportunities and Challenges in a Fast-Growing Market

Power | July 2012 | K&A India Power Market Update

India's priority is first to generate low-cost power and then observe environmental initiatives. Late in 2009, the government issued new norms for ambient air quality for the first time in 15 years. The new norms are stricter and more inclusive than the previous requirements and include specific pollutants to be monitored for the first time. Prior to 2009, the only pollutants monitored were NO_x, SO₂, PM₁₀, lead, CO, and ammonia. The new norms include PM_{2.5}, ozone, benzene, arsenic, nickel, and PAH benzo(a) pyrene. Areas throughout India are identified as attainment or nonattainment, much as in the U.S. Within the 12th five-year plan (2012–2017), emission limits for power plants likely will be formulated requiring the application of control technologies similar to those used in Western plants.

[Read Full Story...](#)

Managing the Catalysts of a Combustion Turbine Fleet

Power | May 2012 | Client: Cormetech

Natural gas-fired fleets comprising diverse turbine unit types are operating their units more these days because of the historic low price of natural gas. With increased operating hours, fleet owners are challenged to find the best ways to manage their SCR catalyst systems. [Read Full Story...](#)

CFB set to challenge PC for utility-scale USC installations

Power Engineering International | January 2012 | | Client: Amec Foster Wheeler

Over the last four decades CFB has come a long way from its humble beginnings as a robust small-scale industrial boiler technology routinely used to burn difficult fuels. Not only do boiler designs now extend to 800 MW, but CFB has gone ultra-supercritical (USC). [Read Full Story...](#)

Air Preheater Uses New Adaptive Brush-Sealing Design

Power | August 2011 | Client: Sealeze

Radial, axial, and circumferential metallic seals installed on rotary, regenerative air preheaters have evolved little from the original metal strip designs that date back to the original Ljungström preheaters developed nearly a century ago. Unfortunately, metallic strip seals degrade soon after installation, allowing excessive air-to-gas leakage, which translates into increased fuel consumption and fan power. Brush seals are ideally suited for replacing strip steels on rotary, regenerative air preheaters. As radial, axial, and circumferential seals, the brush products provide a high degree of abrasion resistance, flex life, and bend recovery not possible with rigid strip seals. [Read Full Story...](#)

Reduce CO2 Emissions and Boost Generation Efficiency

Power Engineering | July 2011 | Client: Zolotech

Improving power generation efficiency is becoming more important for coal-fired power plants throughout the U.S. Resource conservation, energy independence and climate change awareness incentivize owners and operators to improve efficiencies, reduce heat rates, save fuel and reduce emissions. Advanced combustion monitoring and optimization tools combined with plant personnel training focused on generation efficiency best practices are key to achieving these goals.

In 2010, the U.S. Department of Energy's National Energy Technology Laboratory (NETL) sponsored demonstration projects to reduce CO₂/MWh using generation efficiency improvements through combustion balancing at two coal-fired power plants¹. The projects, conducted at American Electric Power's (AEP's) John Amos Unit 3 and Detroit Edison's (DTE's) Belle River Unit 2 and led by Zolo Technologies, used the ZoloBOSS real-time combustion monitor to balance combustion coupled with closed-loop combustion optimization software to sustain improvements. [Read Full Story...](#)

Advanced SCR Catalysts Tune Oxidized Mercury Removal

Power | August 2010 | Client: Cormetech

Catalysts used in selective catalytic reduction (SCR) systems in utility boilers provide high NO_x removal efficiencies that routinely exceed 90%. A major co-benefit of applying SCR to coal-fired power plants is that the SCR catalyst also oxidizes the vapor phase mercury from an elemental form to a soluble ionic form, which can be readily captured in a downstream flue gas desulfurization process. Mitsubishi Heavy Industries and Cormetech have developed an advanced SCR catalyst technology with high mercury oxidation activity capable of achieving 95% oxidized mercury over a wide range of operating conditions. [Read Full Story...](#)

Circulating Fluid Bed Scrubbers Bridge the Gap Between Dry and Wet Scrubbers

Power | July 2010 | Client: Nooter/Eriksen

Circulating fluid bed (CFB) dry scrubbing technologies provide distinct advantages over conventional spray dryer absorber scrubbers for removing SO₂ from flue gases. The CFB also competes well against wet limestone flue gas desulfurization processes typically favored for large boilers firing high-sulfur coals. With high SO₂ removal rates in a dry treatment process, the CFB scrubber appears to be the best of both technologies: a water-stingy scrubber with high SO₂ removal rates. [Read Full Story...](#)

Improving SCR Performance On Simple-Cycle Combustion Turbines

Power | June 2010 | Client: Cormetech

Austin Energy replaced the selective catalytic reduction (SCR) catalyst twice over five years for its four peaker turbines. The duct modifications and injection grid redesign, combined with new catalyst, are producing high NOx reduction and low ammonia slip, and the catalyst is now expected to last at least five years. [Read Full Story...](#)

Web-based Collaboration Works

Power | June 2010 | Client: Aconex

An estimated 450 GW+ of fossil, hydro, nuclear, solar, wind energy and carbon capture projects are being planned worldwide over the next decade. As projects go through various phases - feasibility evaluation, proposal, application pending, permitted, site preparation, and construction - some may be discontinued and new projects added. Typically, the total number of projects "in play" exceeds 600.

As soon as a power project is approved, the pressure is on to get multiple parties - the owners, EPC firms, consultants, contractors and suppliers - working together efficiently to meet an aggressive schedule. This challenge is often exacerbated by having globally-dispersed participants and a large volume of data flowing around the project team.

Web-based collaboration systems are information management tools that allow parties working on a project to store, track, share, and archive their information using one central, on-line platform. Delivered on-demand for a project's duration, these systems enable authorized team members to instantly view, track and distribute their files from any location and at any time. [Read Full Story...](#)

India: Can she make the most of her opportunities?

Power Engineering International | June 2010 | K&A India Power Market Report

A fast growing economy and an appetite for energy means India will be attractive to power companies and providers of environmental equipment for some time. Where do the opportunities lie? [Read Full Story...](#)

Pollution Control Retrofit for Diesel Generators

Power Engineering | April 2009 | Client: CCA Combustion Systems

Selective catalytic reduction (SCR) technology configured with a diesel oxidation catalyst (DOC) have combined to reduce nitrous oxide (NOX) emissions by more than 73 percent and carbon monoxide (CO) emissions more than 90 percent on diesel generators. [Read Full Story...](#)

Predictable SCR Co-Benefits for Mercury Control

Power Engineering | January 2009 | Client: Cormetech

Selective catalytic reduction (SCR) for NOx removal from utility boilers has been shown to have extremely high removal efficiencies. In recent years, there has been increased focus on a potentially significant pollution control co-benefit of the SCR process, specifically the capability to oxidize vapor phase mercury in coal-fired power plants. [Read Full Story...](#)

Proper Design essential for storage, flow and metering of powdered activated carbon

Power Engineering | August 2008 | Client: Metalfab

Powdered activated carbon (PAC) used as a sorbent for control of mercury emissions from coal fired power plants exhibits properties which can present challenging problems for storage, flow and metering. Over time, PAC material can densify and get packed in storage silos and possibly cutting off flow entirely. Controlled flow and accurate metering are critical to effectively using PAC and to achieving targeted mercury emission reductions. Inadequate equipment and system design can result in excessive PAC consumption resulting in high operating costs or insufficient PAC injection resulting in mercury removal rates that are out-of-regulatory compliance. [Read Full Story...](#)

Catalyst Management: Key to SCR Effectiveness

Modern Power Systems | May 2008 | Client: Cormetech

SCR catalyst deactivation rates, performance requirements and system capabilities are central to predicting when catalyst layers should be replaced or regenerated, or a new layer added – the essence of catalyst management. [Read Full Story...](#)

Easing the Exodus

Power Engineering | June 2006 | K&A Market Report

Aging baby boomers, who constitute more than 25 percent of the U.S. population, are nearing retirement, a fact reflected in the demographic profile of the power generation industry workforce. A recent study by Krishnan & Associates (K&A) on the aging workforce trends at U.S. coal-fired power plants, the cornerstone of the nation's power supply, found that the average age of the workforce at the power plants is approximately 48 years. With nearly half the technical and plant management personnel approaching retirement age, power plants face losing skilled, talented individuals who possess vital plant operating and maintenance knowledge. Furthermore, with the changing demographics, specialized labor to replace this talent pool is likely to be in short supply and difficult to recruit. As a result, the changing workforce demographics represent a vital concern for power plant owners. [Read Full Story...](#)

Improved Catalyst Can Clear The Air

Power Engineering | May 2006 | Client: Cormetech

Over the past 30 years, air pollution control technology has vastly improved coal-fired power plant emissions in terms of their impact on air quality. Now, it can help improve stack emission opacity as well. Although such improvements are primarily visual, their significance is immense. [Read Full Story...](#)

Long-term catalyst health care

Power | January / February 2006 | Client: Cormetech

Catalyst management refers to a comprehensive methodology for predicting when catalyst layers should be replaced or regenerated, or a new layer added, based on catalyst deactivation rates, performance requirements, and system capabilities. Effective catalyst management requires a long-term plan for maximizing performance based on projected plant outage schedules, future emissions regulations, available control technologies, and plant improvements. Boiler/SCR system operations, plant and fleet emissions-reduction strategies are some of the key issues in defining a catalyst management strategy. [Read Full Story...](#)

Cleaning Up At A Landfill

Diesel Progress | August 2005 | Client: CCA Combustion Systems

Waste collection and recycling service provider Waste Management Inc. has retrofitted six of its landfill and transfer station vehicles with Combustion Components Associates Inc.'s (CCA) Elim-NOx urea SCR technology under a demonstration program designed to reduce NOx emissions from diesel exhaust to improve local air quality, especially in non-attainment areas. Funding for the program was provided by Clean Air Communities (CAC) through a community grant to Local Development Corp. of East New York. [Read Full Story...](#)

Two pollutants for the price of one

Power | June 2005 | Client: Reaction Engineering

When devising your strategy for complying with the new Clean Air Interstate Rule and Clean Air Mercury Rule, you'd be wise to consider the potential synergism of available pollution control technologies. Taking the time to carefully develop a co-benefits mercury strategy may reduce your overall cost of compliance and exposure to performance and financial risk. [Read Full Story...](#)

Economics of Emissions on Heavy-Duty Trucks

Dieselnet | January 2005 | Client: CCA Combustion Systems

Emissions from diesel engines are a significant air-quality issue, accounting for about one-third of the nation's NOx emissions and one-quarter of the PM emissions from mobile sources. The U.S. EPA has responded with new, tougher emissions standards, the first tier of which took effect in 2004 (October of 2002 for engine builders affected by the consent decree). Even more stringent rules will take effect in 2007 and 2010, along with new diesel fuel standards requiring lower sulfur levels. [Read Full Story...](#)

Economics of SCR Technology on Highway Trucks

Diesel Progress | October 2004 | K&A Market Report

Compliance after Expanding Production Capacity

Ethanol Producers Magazine | October 2004 | Client: CCA Combustion Systems

Firms Books Order for 18 New SCR Systems on Diesel Trucks

Wall Street News Alert | August 2004 | Client: CCA Combustion Systems

Combustion Components Associates (CCA), a company that develops, manufactures and markets air pollution control technologies announced today the receipt of contracts for its ELIM-NOx SCR system on 6 diesel trucks in the New York Metropolitan Area and 12 off-road construction trucks in Southern California. The orders exceeding \$400,000 represent the first large commercial contract for ELIM-NOx since it was commercialized for retrofit on existing on-road and off-road diesel applications and new trucks in early 2004.

Putting SCR Trucks to Work in US

Today's Trucking | August 2004 | Client: CCA Combustion Systems

Combustion Components, a manufacturer of air pollution control technologies, announced that its ELIM-NOx SCR system will be incorporated on 6 diesel trucks in the New York and 12 off-road construction trucks in California. The ELIM-NOx system works on the principals of SCR -- Selective catalytic reduction. SCR is the choice for Europe's next round of emissions rules (called Euro 4) in October 2005, which are roughly equivalent to the 2007 North American standards. It's a well-developed technology that reduces NOx while returning better fuel consumption than EGR. It uses ammonia produced on board the vehicle from a non-toxic, easy-to-handle aqueous urea solution. [Read Full Story...](#)

A Comparison of Clear Skies Act and Clean Power Act to Control Multi-Pollutant Emissions

Electric Light and Power | March 2003 | Client: RJM Corporation

The legislative proposals S.556 (also known as the Clean Power Act, introduced by Senator Jeffords) and S. 2815 (also known as Clear Skies Act, introduced Senator Bob Smith) seek a sustained approach to pollution control at power plants in the United States. Although the significant difference between the proposals can influence compliance strategies adopted by power producers, the remarkable consensus in key areas suggests that additional regulations are possible in the very near future [Read Full Story...](#)

Clean-up Team-up

Power Engineering International | January 2003 | Client: RJM Corporation

Urea Based SCR Technology Achieves 12PPM NOx on Natural Gas Engine

Power Engineering | October 2002 | Client: RJM Corporation

RJM's ARIS SCR technology recently achieved a 95.9 percent NOx reduction on a 320 kW lean burn natural gas engine. The system was installed at the corporate headquarters of Clean Air Partners located in San Diego, California, a locale subject to some of the nation's most stringent air quality regulations. [Read Full Story...](#)

Low NOx Emissions Achieved in Southern California

Diesel Progress | August 2002 | Client: RJM Corporation

Top Plants Survey

Power | August 2002 | Client: RJM Corporation

Given the evolving competitive nature of the power generation business, benchmarking powerplant metrics has never been more necessary. At the same time, it has never been more difficult. Even when this segment of the industry was fully regulated and plant personnel willfully shared financial and operating data, benchmarking had its limitations. Today the job is infinitely more difficult because some plants are regulated, some deregulated, some partially regulated. What this means is that some plants are required to disclose publicly certain information, some are not.

Technologies for NOx Emissions from Off Road Diesel Vehicles

EM | February 2002 | Client: RJM Corporation

Emission Product Announcement

Energy Markets | February 2002 | Client: RJM Corporation

SCR Economics for Diesel Engines

Diesel and Gas Turbines, China Edition | December 2001 | Client: RJM Corporation

Traditionally, diesel generation has not been viewed as a long-term baseload solution to avoid potential energy shortfalls. However, many power producers in the Pacific Northwest of the United States are resorting to diesel-fired generation as low water conditions have reduced the generating capacity of the regions hydropower systems. In the state of Washington, newly permitted diesel and natural gas engines will produce about 396 MW and 75 MW of electricity respectively for their owners this summer. Each diesel and natural gas generator has an average size of about 1.5 MW and 1.05 MW, respectively. The engines have been installed in 18 counties in Washington to satisfy the increased need for additional short term generation. [Read Full Story...](#)

Firm Offers up SCR Tid-bit

Light & Power | November 2001 | Client: RJM Corporation

RJM Corporation, a provider of emission control technologies, has announced multiple contracts for the installation of its RJM ARIS selective catalytic reduction (SCR) technology on more than 100 diesel and gas engines in the U.S. The total value of the contracts is in excess of \$7 million, with focus in the Pacific Northwest. [Read Full Story...](#)

SCR for Diesel Engines

U.S.DOE-EPRI Newsletter on Materials and Components in Fossil Energy Applications | October 2001
| Client: RJM Corporation

Coal Fired Plants Reduce NOx Emissions With Staged Combustion

Power Engineering | October 2001 | Client: RJM Corporation

Unlike sulfur oxides, which are formed only when coal contains sulfur, nitrogen oxides (NOx) are formed from nitrogen in the fuel and the combustion air. Currently there is no method for removing the nitrogen from coal before it is burned. Annually, coal-fired power plants account for approximately 25 percent of the total NOx emissions in the U.S. Low-NOx combustion systems reduce the availability of oxygen in the primary combustion zone of the boiler. There are three ways to reduce oxygen in the combustion area: staged combustion using low-NOx burners (LNB) alone, using LNB with over-fire air (OFA) or by reburning. In reburning, coal and natural gas, from separate burners, are burned together. [Read Full Story...](#)

SCR Economics For Diesel Engines

Diesel & Gas Turbine Worldwide | July - August 2001

SCR Technology enables Diesel and Gas Engines To be Used for Prime Power Generation

Cogeneration and On-site Power Production | July-August 2001

RJM Corporation, a leading provider of innovative emission control technologies, today announced multiple contracts for the installation of its RJM ARIS(TM) Selective Catalytic Reduction (SCR) Technology on more than 100 diesel and gas engines in the United States. The total value of the contracts is in excess of \$7 million. During the past six months, RJM's ARIS(TM) SCR Technology has generated unparalleled interest in various regions of United States, especially in the Pacific Northwest, where the technology is fast emerging as a cost-effective solution to beat peaking summer electricity prices. [Read Full Story...](#)

Island Diesels Get Cleaned Up

Diesel & Gas Turbine Worldwide | May 2001 | Client: RJM Corporation

A small island dominated by its summer tourist trade, Block Island, usually sees peak summer demand reach 3550 kW. The island utility therefore has installed an additional 1300 kW Cat 3516B-Powered gen-set to help ensure power availability on the island. [Read Full Story...](#)

Krishnan Fires at Coal Plants

The Times of India | November 2000