



## **THE SOUTH AFRICAN COAL ASH ASSOCIATION (SACAA)**

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No 29, June 2010



## **ASH @ WORK**

**COMMUNIQUE OF THE SOUTH AFRICAN COAL ASH ASSOCIATION**

*from your Editors and President of the SACAA*

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### **Editorial**

Since the previous issue of ASH @ WORK we have had two Council and two Technical Meetings. Feedback on these is given below.

There are also some very interesting news items and comments on the ash scene in the USA, which has rubbed off onto the local situation.

It seems our members are too busy in their respective jobs as we have received no information on new technologies, interesting happenings, or relevant company developments for publication in ASH @ WORK. Please get the communications flowing so that the ash community can share and benefit from such developments. The address for communications appears at the end of this newsletter.

By the time our members receive this issue the soccer frenzy, caused by staging the FIFA World Cup in South Africa, will have reached fever pitch and lots of people will have little time to attend to the normal daily chores. We wish all the soccer friends a super experience and may your favoured team be the winner!

### **Council Matters**

The 93<sup>rd</sup> Council meeting was held at SAICE, Midrand on 10 February 2010 and the 94<sup>th</sup> on 28 April 2010.

The Council has established contacts with the Department of Environmental Affairs and our chairman, Dr Richard Kruger, now represents SACAA on the working group tasked with the formulation of amendments to the National Environmental Management Waste Act. He is working hard to rectify many misconceptions that were in place prior to his involvement as it was the intention that ash be declared a hazardous waste and thus its utilisation may come under severe pressure.

Closer involvement with the country's foremost coal ash generator, Eskom, has been achieved with Environmental Manager Deidre Herbst now representing Eskom on Council.

One of SACAA's Councilors serves on the SABS working group tasked with the review of specifications concerning the application of fly ash and other materials. The working group put proposals to the SABS that would replace the existing specification SANS 1491-2 with EN 450-1 and 450-2 (Fly ash for concrete) and also entail adoption of EN 451-1 and 451-2 (Method

of testing fly ash). Furthermore it was suggested that SANS 1491-3 be replaced by EN 13263-1 and EN 13263-2 (Silica fume for concrete). It was also proposed to adopt some sections of EN 934 (Admixtures for concrete mortar and grout). It will take some time before a decision is reached on these draft proposals by the SABS.

On the topic of local ash research Council hopes to obtain inputs from the country's tertiary institutions and research organisations as to the type and number of projects that are conducted on ash-related research. An investigation of this is currently conducted at the University of Pretoria from which hopefully a database can be generated. This should assist in directing the country's research efforts and, at the same time, stimulate the interests of the younger generation in the subject.

With regard to the latter Ash Resources has promised to sponsor an annual award of R5000 for the best presentation by a 4<sup>th</sup> year student in civil engineering at the University of Pretoria.

SACAA's website, [www.coalash.co.za](http://www.coalash.co.za), has been rejuvenated and members log in now also provides a link to the ash website of the US company Separation Technologies. SACAA's newsletter ASH @ WORK, which previously was only accessible by members, has been placed into the open domain.

The next Council meeting is set for 28 July 2010 and SACAA's members are urged to submit their ideas and proposals for the enhancement of activities to the Administrator.

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### **Feedback: SACAA Technical Meeting, 10 February 2010**

**Mr Bryan Perrie**, Managing Director, Cement & Concrete Institute, gave an illustrated presentation on **Ultra Thin Concrete Pavements and an Overview of the Gauteng Freeway Improvement Projects (GFIP)**. Both topics are interlinked as the ultra thin technology is employed in parts of the GFIP. While the costs of the Ultra Thin (50 to 60 mm in thickness) are about the same as for conventional concrete pavements, the construction takes only about half the time. Both topics were of special interest to everyone as we are all road users on a daily basis and any improvements are most welcome.

The presentation was followed by the usual networking over refreshments.

### **Feedback: SACAA Technical Meeting, 28 April 2010**

**Mr Graeme Smith**, Managing Director, Ash Resources, gave an illustrated presentation on the **Burj Khalifa Tower, Dubai**

Towering over the impressive Dubai sky-line, the recently renamed Burj Khalifa (Khalifa Tower), at 828 metres high, is the tallest man-made structure ever built. Ash Resources (South Africa), through their UAE Marketing Office, are extremely proud as a South African supplier to have been involved in this incredible feat. Fly Ash was used on the project for the benefits it imparted to fresh and hardened concrete, notably workability and durability. Ash Resources classified fly ash proved to be a critical constituent in the pouring of the approximate 45,000m<sup>3</sup> concrete foundations including some 192 piles.

The presentation ended with a lively question and answer session. This was followed by networking interactions over refreshments sponsored by Ash Resources.

## Some Local News on Fly Ash

**Sephaku** has been very much in the news lately. Roy Cokayne reports in Business Report of 3 June 2010 as follows: "Nigerian manufacturing conglomerate Dangote Industries has invested an additional R779 million in Sephaku Cement, which will fund the equity requirements for Sephaku's R3,3 billion, 2,2 million tons-a-year cement project that is scheduled to come on stream in 2012. Sephaku Cement is a subsidiary of listed empowered minerals exploration, development and investment company Sephaku Holdings. On Tuesday Sephaku reported it had signed a heads of agreement with Dangote for its further investment in the company. The capital injection follows Dangote's initial R350million investment. The project involves the construction of two new cement manufacturing facilities: a clinker and cement producing facility in the North West and a cement grinding facility at Delmas in Mpumalanga."

It has come to our attention that the ash section of Sephaku's website ( [www.sephakucement.co.za](http://www.sephakucement.co.za)) now lists two products *Smart Ash* and *Hard Ash* with Material Safety Data Sheets.

## Some Ash News from the USA (main source: [www.smartash.info](http://www.smartash.info))

### EPA ANNOUNCES PLAN TO REGULATE COAL ASH

(EPA 4 May 2010). The U.S. Environmental Protection Agency today is proposing the first-ever national federal rules to ensure the safe disposal and management of coal ash from coal-fired power plants.

### EPA'S PROPOSED COAL ASH REGULATION RELEASED MAY 4, 2010

To view the full EPA Proposed Coal Ash Regulation please go to: <http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/ccr-rule/ccr-rule-prop.pdf>

### EPA BACKED OFF "HAZARDOUS" LABEL FOR COAL ASH AFTER WHITE HOUSE REVIEW

(New York Times 7 May 2010). U.S. EPA's proposed regulation of coal ash as a hazardous waste was changed at the White House to give equal standing to an alternative favored by the coal industry and coal-burning electric utilities. The Obama administration is now considering two competing rules for regulating the ash that contains toxins that include arsenic, lead and mercury. The first would set binding federal disposal requirements for the ash, and the second would label the ash nonhazardous and leave enforcement to the states (E&ENews PM, May 4).

### EPA STIFFENS COAL ASH RULES, BUT PROPOSAL ALLOWS RECYCLING

(Greensource 10 May 2010). The U.S. Environmental Protection Agency on May 4 unveiled a draft rule to regulate coal ash, for the first time, under Subtitle C of the Resource Conservation and Recovery Act. The proposal would require coal-fired power plants to retrofit existing impoundments, which typically store ash in liquid form, with composite liners. It also would provide strong incentives to eventually close surface impoundments and shift to dry storage in landfills. The new scrutiny follows a 2008 collapse of a Tennessee impoundment that spread ash over a 300-sq-mile area of land and water.

### EPA RELEASES MORE ELECTRIC UTILITY PLANS TO IMPROVE SAFETY OF COAL ASH IMPOUNDMENTS

(EPA 19 May 2010). The U.S. Environmental Protection Agency (EPA) is releasing action plans developed by 16 electric utility facilities with coal ash impoundments, describing the measures the facilities are taking to make their impoundments safer. The action plans are a response to EPA's final assessment reports on the structural integrity of these impoundments that the agency made public this February.

## **The EPA and Coal Ash – Disposal Proposals Bring More Questions**

*Authored By: Darrell Proctor, EUCI, and brought us by Richard from the Copenhagen meeting.*

What to do with coal ash – a byproduct of the coal burned at power plants – has been discussed (and sometimes cussed) by utilities and environmentalists for years.

The issue came to the forefront again in December 2008 when a spill at the Tennessee Valley Authority's facility in Kingston, Tenn., sent an estimated 5.4 million cubic yards of coal ash slurry flowing across 300 acres of land and into the Emory and Clinch rivers.

The cleanup continues and the Environmental Protection Agency in May announced two proposals as it considers the first-ever federal regulatory requirements for coal ash disposal. EUCI has scheduled a conference July 22-23 in Denver where legal experts, engineers and industry officials will discuss the EPA proposals and their potential impacts. John Kammeyer of the TVA will be on hand to discuss the cleanup and its challenges; conference registration is under way.

"The time has come for common-sense national protections to ensure the safe disposal of coal ash," said EPA Administrator Lisa Jackson in announcing the proposals. Utilities and others in the energy industry are concerned about the economic impact of new rules, while environmentalists say they're pleased the EPA is taking action but worry the regulations won't be strong enough.

One proposal would create a program of federal requirements for waste management and disposal. It would designate coal ash as a "special waste," generally subject to the same regulation as hazardous waste. It would allow for beneficial uses of ash, a key component since ash plays a large role in construction (concrete, drywall, asphalt) and "beneficial use" is a multibillion-dollar industry. In this case, ash would be regulated under Subtitle C of the Resource Conservation and Recovery Act.

The second proposal would give the EPA authority to set performance standards for waste management facilities, standards enforced primarily through citizen lawsuits. It also would allow for continued beneficial uses. Regulation would be under Subtitle D of the RCRA.

Some legal experts say the second option doesn't mean the federal government is forgoing oversight, but rather leaving responsibility to states. They also say having both proposals continue to allow beneficial use - the Beville exemption - is a nod to the economic consequences that could come from taking away the exemption.

"EPA supports the legitimate beneficial use of coal combustion residuals. Environmentally sound beneficial uses of ash conserve resources, reduce greenhouse gas emissions, lessen the need for waste disposal units, and provide significant domestic economic benefits," said Mathy Stanislaus, assistant administrator of the EPA's Office of Solid Waste and Emergency Response, whose office is responsible for implementing the proposals. "This proposal will clearly differentiate these uses from coal ash disposal and assure that safe beneficial uses are not restricted and in fact are encouraged."

But deciding whether regulation comes from Subtitle C or Subtitle D is just the beginning. Scott Holladay, an economist with New York-based nonprofit Institute for Policy Integrity who has researched coal ash disposal, told *The Iowa Independent*: "How we define beneficial use will be the meat of this. There is room to gut the regulations from within."

Even the EPA has noted that under Subtitle D, states could decide their own definition of "beneficial use." And states have varied uses for coal ash beyond a construction material.

In West Virginia (where Gov. Joe Manchin has told the EPA a hazardous waste designation for coal ash "could have devastating consequences"), ash is sent back to the coal mines. Alkaline coal combustion residuals neutralize the acid drainage from high-sulfur coal seams, making it possible to mine some of those seams. And the ash also is applied to land as part of the reclamation of surface mines.

In Nebraska, coal ash has been used to reduce the flood risk of the Platte River. The ash promotes melting that can prevent ice jams. Earlier this year, Sen. Robert Casey, D-Penn., told the EPA that a hazardous waste designation (limiting the use of coal combustion residuals) would shutter his state's 13 waste coal plants at a cost of about 10 percent of Pennsylvania's electricity.

Still, there are environmentalists who think Subtitle D is a better option because states would take a tougher stand – and provide more oversight – on coal ash disposal and recycling.

For its part, the EPA is looking at public comments and weighing the options. A recent response: "This rule continues to be under review, and we expect to issue a proposed rule in the near future."

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## LAST SNIPPET

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The huge volcanic ash cloud that disrupted aviation in Europe and consequently all the destinations serviced by the planes from Europe, showed that this type of uncontrolled ash release is beyond the legislative controllers. Luckily the ash we are dealing with comes from controlled combustion processes and with the necessary care this ash should never pose a problem; a valuable resource!!

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## FORTHCOMING EVENTS

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**SACAA Technical Meeting, at SAICE, Midrand, 28 July 2010 at 15:00**

Presentation by **SACAA Councillor Dr Karen Surridge-Talbot** on **Microbes in Ash**.

**SACAA AGM with Technical Meeting, at SAICE, Midrand, 18 August 2010 at 15:00**

**International Conference on Sustainable Construction Materials, 28 - 30 June 2010, Ancona, Italy**

Conference website: <http://www4.uwm.edu/cbu/ancona.html>

**15th World Clean Air Congress, 12 to 16 September 2010, Vancouver, British Columbia, Canada**

Congress theme "**Achieving Environmental Sustainability in a Resource Hungry World**"

Congress website: [www.uappa2010.com](http://www.uappa2010.com)

**International Conference on Material Science and 64th RILEM Annual Week, 16 October 2010, Aachen, Germany**

This conference is organised by the Institute of Building Materials Research Aachen University in cooperation with RILEM. The conference will consist of three parallel sessions with papers solicited from the three themes Textiles Reinforced Concrete, Modelling of Heterogeneous Materials and Additions Improving Properties of Concrete.

Conference website: [www.matsci2010.rwth-aachen.de](http://www.matsci2010.rwth-aachen.de) and [news2009/RilemMATSCI\\_conference.pdf](http://news2009/RilemMATSCI_conference.pdf)

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## YOUR SACAA COUNCIL

<p><b>Elected Members:</b></p> <p>Richard Kruger (President)  Wayne Truter, UP (Vice President)  Dieter Heinichen (Treasurer/Administrator)  William Burtone, PPC  Karen Surridge-Talbot, UP  Sabine Verryn, XRD Analytical and Consulting</p>	<p><b>Corporate representatives [&amp; alternates]:</b></p> <p><b>Afrisam:</b>  Mike McDonald  [Amit Downerangen]  [Eunice Mguqulwa]</p> <p><b>Ash Resources:</b>  Matthew Reynolds  [Andrew McKeen]</p> <p><b>C&amp;CI:</b>  John Goodman</p> <p><b>Eskom:</b>  Deidre Herbst</p> <p><b>Lafarge SA:</b>  Lebogang Mandiwana</p> <p><b>PPC:</b>  Eduardo Auger  [Walter Wirth]</p> <p><b>Sephaku Ash:</b>  Hennie van Heerden</p> <p><b>Ulula Ash:</b>  Theresa Gilmore  [Mark Hovy]</p>
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The editorial team would welcome any information for publication in forthcoming **Ash@Work** newsletters.

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**Disclaimer:** *The views expressed in this newsletter are not necessarily those of the Council of the South African Coal Ash Association*