Water Desalination Report

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Conferences

American Water Summit goes interactive

Competition for conference attendees seems to be growing exponentially, and organizers have to be more creative to ensure that they are able to attract a crowd. Next week, for example, WEFTEC in New Orleans will be competing with the Saudi Water & Power Forum in Jeddah and the EuroMed Desal conference in Tel Aviv.

There is another clash in the first week of November, when GWI's American Water Summit in Washington DC will coincide with the rescheduled Desalination: An Energy Solution event in California. The California event has pulled in a number of the desalination greats such as Leon Awerbuch, Claus Mertes and Nikolay Voutchkov for a two-day program: one day looking at thermal desalination, and a second day dedicated to membrane desalting.

The GWI event has a less strong desalination focus, but also has well-known names such as Robert Kennedy Jr, Dick Heckmann, Gary Hart and CEOs from Veolia, GE and American Water on the podium, and subjects including desal/reuse opportunities in shale gas and water scarcity strategies in the Southwest on the agenda, with the intention of drawing a strong high-level executive audience.

The most important innovation at the event will be the introduction of an audience participation system. GWI publisher Christopher Gasson explains: "A lot of conferences are rather dull and inconclusive because you never really get a response from the audience. With this system we will be able to ask questions of the audience, like 'When do you think the first major desal plant in California will go on line?' or ' How big will the market be for desalting produced water from the oil and gas industry in ten years' time?' and get the answer from a group of people who just happen to be the most important people in the industry. This kind of high-level crowd-sourcing should make the event a whole lot more effective for everyone who attends."

For more information on the American Water Summit, visit www.americanwatersummit.com.

California

$500K budgeted for desal due diligence

San Diego County Water Authority's board has approved an additional $500,000 in its 2011 Water Resources Budget to prepare and negotiate a potential Water Purchase Agreement (WPA) with Poseidon for the Carlsbad Desalination Project.

According to Ken Weinberg, the Water Authority's director of water resources, the additional money would be used to retain the services of Hawkins Delafield & Wood for the preparation of a Term Sheet and full WPA, Clean Energy Capital for their financing advice and pricing methodology, and RW Beck for their specialized desalination and project financing expertise.

At Thursday's meeting, the board also reviewed the Term Sheet outlining the material terms and conditions of a business agreement between the Water Authority and Poseidon for the proposed 50 MGD (189,250 m^3/d) seawater desalination project.

Poseidon continues to seek a definitive equity commitment that will allow it to obtain debt financing for the project's construction. Only after receiving an equity commitment and terminating all existing confidentiality agreements with the Water Authority, will the parties be able to begin WPA negotiations.

In addition to defining how the water price will be calculated, some of the items included in the Term Sheet and which are proposed to be included in the WPA are:

- The contract's term will be 30 years.
- Poseidon will design, permit, finance, construct, commission, start-up, acceptance test and operate the facility.
- The Water Authority will purchase the product water.
- If Poseidon does not achieve financial close by 1 July 2011, the Water Authority may terminate the WPA.
- By posting a letter of credit, Poseidon may get a one-year extension to reach financial closure.
- Further pretreatment pilot testing may be required and Poseidon must provide assurances that it has financial and technical resources to provide any additional pretreatment that may be required.
- Commercial operation will begin on 1 January 2015 or 40 months from financial closure, whichever is first.
- Poseidon will be obliged to pay liquidated damages for failure to meet quantity and quality requirements, but will qualify for relief from quantity guarantees if raw water quality is outside those assumed levels.
- The Water Authority will have the right to negotiate the purchase of the plant at any time following the 10th anniversary of the commercial operation date, or for one dollar at the end of the 30-year contract term.

Global Water Intelligence

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- The Contract will specify minimum financial, technical and experience qualifications, standards and requirements for any Poseidon contractors and subcontractors.

Next Steps

There are reports that Poseidon is nearing an agreement to secure financing and spent last week in New York negotiating an equipment supply contract with IDE Technologies. Meanwhile, the bidding process that will result in the selection of a general contractor is also understood to be drawing to a close.

As a condition of the Coastal Commission's November 2007 Coastal Development Permit for the Carlsbad project, Poseidon was to submit a Marine Life Mitigation Plan (MLMP) addressing the impacts of the facility's use of estuarine water and entrainment of organisms. The MLMP was approved in August 2008 and required Poseidon to identify a proposed site and a preliminary plan.

Based on a comparison of 12 different Southern California sites, Poseidon has now proposed to build its wetlands mitigation project at the Otay River Floodplain in the San Diego Bay National Wildlife Refuge. The Coastal Commission staff and members of a Scientific Advisory Panel have reviewed the site comparison and agree that it is the best of the sites considered.

Staff has recommended that the Commissioners approve the site at their next meeting on 15 October.

United Arab Emirates

ASR project contract awarded

With the commissioning of the Fujairah 2 plant, Abu Dhabi Water and Electricity Company (ADWEC) currently has a total production capacity of 817 MIGD (980 MGD) of desalinated seawater, yet they still face a 26 MIGD (31 MGD) supply deficit. To make matters worse, Peter Menche, director of projects for GTZ, said that the City of Abu Dhabi currently maintains a maximum of only three days of water storage capacity in the event of an emergency.

Last week, ADWEC awarded a 30-month construction contract to a team of Lebanon's Arabian Construction and POSCO Engineering of South Korea to begin work on a new aquifer storage and recovery (ASR) project south of Abu Dhabi City. The project calls for storing up to 16.4 million m^3 (4.3 billion gallons) of desalinated seawater in underground aquifers that could be withdrawn in the event of a national emergency at a rate of 40 MIGD (48 MGD) continuously for three months.

A consortium of German government-owned GTZ and Dornier Consulting (GTZ-DCo) was started in 1993 to provide consulting services to the government of Abu Dhabi, including the development of the ASR project.

The storage site is to be located south of Abu Dhabi City in Liwa. Preliminary plans call for the desalted water to be pumped 107km (67 mi) and injected into an 85m (280 ft) deep aquifer via three gravity infiltration recharge basins over a period of 27 months. It would then be recovered at a rate of 40 MIGD using more than 300 recovery wells at a TDS of 250 to 580 mg/L.

The project is expected to be fully operational by the end of 2014 and will be the first-known ASR to store desalinated seawater. The Manatee Road ASR Project in Collier County Florida stores brackish water that has been desalinated by RO and has been in operation since before 2000.

Australia

Work at Gold Coast desal complete

Final work at the Gold Coast Desalination Plant has now been completed and the plant began resupplying water to the grid on 10 September. The plant is operating at 33 percent of its full, 133,000 m^3/d (35 MGD) production capacity but is capable of operating at 100 percent depending on the requirements of the Water Grid Manager.

The four items completed during the shutdown were:

- Upgraded key sections of pipe work from duplex to super duplex stainless steel
- Strengthening the marine concentrate diffuser header
- An inspection of the seawater intake shaft and completion of subsequent work to prevent leakage
- Replacement of the intermediate permeate water tank

While the work was being done, the plant's operation was ceased temporarily and the region's dams met the demand.

The work remained within the project's approved budget and it has now supplied more than 28 million m^3 (7.4 billion gallons) of water to the grid. It was constructed by a Veolia, John Holland, SKM and Cardno consortium and should be handed over to the state government in the coming weeks.

Texas

Renewable energy Grants for desal

Up to $3 million in State grants are expected to be made available during fiscal 2011 for Texas desalination projects that employ renewable energy. The grants are being awarded from the Desalination Fund through the Texas Department of Rural Affairs (TDRA).

Individual grants will be limited to $750,000, although TDRA may increase the level to $1.5 million for applicants demonstrating additional merit and need. During the

evaluation, additional scoring points will be awarded to applicants that provide substantial matching funds.

Application forms and guides will be posted on the TDRA Web site at www.tdra.texas.gov by 12 October, and the deadline for filing grant applications is 17 December.

Awards

PROJECTS, UTILITIES, PEOPLE RECOGNIZED

During the recent WateReuse Symposium in Washington, DC, the following annual awards were presented:

WateReuse Project of the Year – Large
- *City of Clearwater, Florida*

WateReuse Project of the Year – Small
- *LOTT Clean Water Alliance, Hawks Prairie Reclaimed Water Satellite, Olympia, Washington*

WateReuse Project of the Year – Desalination
- *Texas Water Development Board's Desal Initiative*

WateReuse Institution of the Year
- *Water Replenishment District of Southern California, Lakewood, California*

WateReuse Public Education Program of the Year
- *Hillsborough County Water Resource Services "All Things Reclaimed" Public Education Program, Tampa, Florida*

WateReuse Customer of the Year
- *Loyola Marymount University, Los Angeles, California*

WateReuse Person of the Year
- *Ed Archuleta, El Paso Water Utilities, El Paso, Texas*
- *Rafael Mujeriego, Polytechnic University of Catalonia, Barcelona, Spain*

WateReuse Equipment/Manufacturer Award
- *GE Power & Water, Trevose, Pennsylvania*

WateReuse International Award
- *Sembcorp NEWater Plant, Singapore*

WateReuse Awards of Merit
- *Air Products and Chemicals, Incorporated, Santa Clara, California*
- *Ellis Creek Water Recycling Facility, Petaluma, Calif*
- *Clayton County Water Authority, Morrow, Georgia*
- *CommonGround Golf Course, Denver, Colorado*
- *George Miller, Congressman, Concord, California*
- *Virginia Pipeline Scheme, Adelaide, Australia*
- *West Basin Municipal Water District, Carson, Calif*

The International Water Association (IWA) held its annual water conference and exposition in Montréal, Canada, last week, where it announced its annual Project Innovation Awards. A full list of award winners is available at the IWA website, www.iwa-pia.org/scripts/, but the desalination, membrane and reuse-related winners were:

Global Grand Prize Winner for Applied Research
- *PUB, Singapore's National Water Agency, for its Variable Salinity Plant*

Global Grand Prize Winner for Design / Superior Achievement Award Winner
- *WaterSecure, Brisbane, Australia for its Western Corridor Recycled Water Project*

Global Grand Prize Winner for Planning
- *Gold Coast Water, Australia, for Gold Coast Water's Four R's Project – From Vision to Reality*

Global Honor Award for Planning
- *Zhangjiagang Free Trade Zone Sembcorp Water Co, Ltd, Zhangjiagang, Jiangsu Province, China for an Integrated, Energy Saving, Zero Liquid Discharge and Sustainable Wastewater Treatment/Reclamation Project*

Australia

REUSE PUBLIC PERCEPTION

Following the recent launch of its Strategic Research Plan and first call for proposals, the Australian Water Recycling Center of Excellence has issued a call for Expressions of Interest (EOI) for a second funding round.

The new funding round focuses exclusively on projects that support the statement that 'reclaimed water is viewed as an acceptable alternative water for augmenting drinking water supplies'.

The Center is seeking project partners who will work with industry to develop a National Demonstration and Engagement Program that would support successful public engagement and address stakeholder concerns through the provision of contemporary scientific information on potable reuse.

The EOIs are to cover the following project streams:
- Demonstration of water production performance and operational reliability
- Evaluation of social, economic and governance challenges
- Design and implementation of a national demonstration and engagement program

Up to A$3million is available for the project, which is to involve leading-edge modes of communication that overcome known social barriers to acceptance and adoption of reclaimed water use.

EOIs are due on 29 October, and the shortlisted bidders will have until 21 February 2011 to submit a detailed proposal. For more information, visit www.australianwaterrecycling.com.au/coe/news/funding-round-2.

In brief

LG Electronics' senior management said last week that the company will invest $400 million over the next ten years to enter the industrial water treatment market and expand its coverage into the sewage and drinking water treatment sector. The Korean company will initially concentrate its R&D on developing an advanced membrane filtration system and plans to add engineering, procurement and O&M activities.

A consortium of Cadagua (Spain) and ESSA Engineering and Marine Works (UAE) has been awarded a $52 million EPC contract for the 45,460 m^3/d (12 MGD) **Al Zawrah 2 SWRO** project in the UAE's Ajman Emirate. The Federal Electricity and Water Authority (FEWA) is the client.

AMTA will sponsor a 28 October **Webinar** featuring Jupiter, Florida's 14.5 MGD (54,880 m^3/d) split-feed nanofiltration water treatment facility. Paul Jurczak, Jupiter's town manager, will facilitate the 30-minute session. For more information, visit https://video.webcasts.com/events/pmny001/viewer/index.jsp?eventid=33008.

Huntington Beach, California's City Council took another step to help move Poseidon's proposed 50 MGD (189,250 m^3/d) **Huntington Beach Desal Project** forward last week. The Council voted to approve a Coastal Development Permit, Tentative Parcel Map and Restated and Amended Owner Participation Agreement. The Project is now expected to go before the State Lands Commission in the next two months.

Transition

Y.M. El-Sayed, 1928-2010

Professor Yehia M. El-Sayed died at his home in Fremont, California last week, after a long battle with cancer. He was born in Alexandria, Egypt 82 years ago and is survived by his wife Amina El-Kholi, two children and two grandchildren.

Dr El-Sayed received a doctorate of mechanical engineering from Manchester University, and he taught and conducted research at Assiut University, Kansas State, Dartmouth College, Glasgow University, Tripoli University and the Massachusetts Institute of Technology before starting his own consulting firm, Advanced Energy Systems, in 1989.

He was a recognized authority on desal, thermodynamics and thermoeconomics, and is well known for his 1994 book *A Desalination Primer*, which was co-authored by K.S. Spiegler, and his 2004 book, *Thermoeconomics of Energy Conversion Systems*. He was a Life Fellow of the American Society of Mechanical Engineers and a two-time recipient of their EF Obert award for his scientific achievements. Dr El-Sayed also won an award for his paper *Thermoeconomics of Seawater Desalination Systems* at the 1997 IDA World Congress in Madrid.

People

Dr Ir Aleksandar Vlaski, formerly a senior desal expert with Royal Haskoning, The Netherlands, has been appointed managing director of Klaren BV. He can be contacted at vlaski@klarenbv.com. Founder and former director, **Dr Ir Dick G Klaren**, the inventor of the self-cleaning fluidized bed evaporator (FBE), will continue his involvement with the company as principal adviser and chief scientist and can be contacted at klaren@klarenbv.com.

Lukas Loeffler has been selected to head Siemens Water Technologies based in Warrendale, Pennsylvania. Dr Loeffler is an electrical engineer who most recently headed Siemens' Infrastructure Logistics business unit, and is said to have "great integrative capability."

Consolidated Water Company (CWCO) has appointed **Brent Brodie** as director of sales and marketing. He had previously been GE Water's capital equipment sales manager for the Caribbean. He will be based in Florida and can be contacted at bbrodie@cwco.com.

CWCO also named **Gerard Pereira**, formerly vice president of sales and marketing, as its vice president of product technology. He has been with the firm for 15 years and will remain based in Grand Cayman. He can be contacted at gpereira@cwco.com.

Noreddine Ghaffour has joined the Water Desalination & Reuse Center at King Abdullah University of Science and Technology (KAUST) in Saudi Arabia. Dr Ghaffour was formerly the R&D project manager at the Middle East Desalination Research Center (MEDRC) in Oman. He can be contacted at norreddine.ghaffour@kaust.edu.sa.

Jobs

Nalco has an opening for a Marketing Leader–Membranes, in our Pretreatment and Utilities Offering Development Group, located in Naperville, Illinois. Nalco is the leading provider of integrated water treatment and process improvement services, chemicals and equipment programs for industrial and institutional applications. The successful candidate will have global responsibility to source, standardize, and globalize membrane-based solutions for water treatment. To view entire description, please visit: www.nalco.com/careers and apply to requisition 3077.