

WEST BASIN MUNICIPAL WATER DISTRICT

DECEMBER 6, 2005 - Water Resources
Little, Baker

DECEMBER 19, 2005 - Board Meeting

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INFORMATION CALENDAR

OCEAN-WATER DESALINATION UPDATE

SUMMARY:

DEPARTMENT OF WATER RESOURCES - PROPOSITION 50 GRANT FUNDING UPDATE

This District received grant funding from the State Department of Water Resources (DWR) for two projects in the 2005 water desalination grant funding cycle. These grants included \$250,000 for feasibility studies for the siting and permitting assessments of an ocean-water desalination facility and \$1,500,000 for the construction of an ocean-water demonstration facility. The District has received the final contracts for these projects and is in the process of executing these agreements with DWR.

DWR has released solicitations for proposals for the 2006 grant funding cycle for water desalination projects that will award \$25 million for projects that are seeking assistance in the following areas:

- Feasibility Studies (\$250,000);
- Research and Development Projects (\$500,000);
- Pilot and Demonstration Projects (\$1,500,000); and
- Water Desalination Construction Projects (\$3,000,000).

Proposals are due no later than January 31, 2006. Staff is evaluating the various categories and is in the process of identifying projects that would compliment the District's research objectives and DWR's solicitation request. Staff will make a recommendation for projects to be considered for submittal approval at a future Board meeting.

PILOT PLANT

Process Support

The District's Ocean-Water Desalination Pilot Plant facility continues to operate at the El Segundo Power Plant and produce valuable research information on the Power Plant's post condenser effluent (warmwater). This piloting information has been a tremendous benefit in allowing the District to better understand the operational and water quality challenges that will be presented in the implementation of a full scale ocean-water desalination facility. Since 2002, the District has relied upon the efforts of United Water Services and Separation Processes, Inc. to assist the District in overseeing the piloting activities. United Water Service currently handles the day-to-day maintenance, operations and sampling efforts of the pilot facility, while Separation Processes facilitates recommended test protocols, research objectives, and provides routine analyses of the Pilot Plant's performance. This piloting model has worked well for the District over the past few years. However, this past year the District enhanced the pilot's research objectives in response to potential regulatory requirements and industry collaboration requirements with our funding partners, thus, requiring the District to investigate an additional array of research protocols. These additional research elements include performance of operational and water quality characteristics of pretreatment and reverse osmosis desalination on warmwater, evaluation of algal toxins, assessment of an ultrafiltration pretreatment technology, and collaboration with the American Water Works Association Research Foundation on the pipe loop corrosion study.

As a result of the increased research objectives and process equipment at the site, staff believes that the presence of an onsite process control engineer is necessary and beneficial above the current level of effort provided under the existing pilot model for the following reasons:

- Due to the increased complexity of the operations of the project, it is essential to have a process control engineer that is familiar with the process and equipment design of the facility, test protocols and objectives to be onsite to oversee and administer the technical objectives of the District's research program;
- Assist operating staff with daily decisions to optimize the operational and water quality performance of the Plant; thus, allowing the District to obtain reliable and consistent data that can be used in the implementation of a full scale facility;
- Assist operations staff in troubleshooting process, mechanical, and control issues that arise on a daily basis; and
- Coordinate and communicate on the District's behalf with the equipment vendors in troubleshooting operational and mechanical issues that can proactively result in the unit remaining operational over the long-term to achieve consistent research data.

The addition of an onsite process control engineer will provide a necessary balance, oversight, and optimization to the new operational protocols of the pilot facility that will allow the District to maintain consistent run-time of the pilot unit and achieve a high-quality research performance that will be integrated into the District's future full scale ocean-water desalination facility. Staff is in the process of gathering proposed costs and an implementation schedule and will bring a recommendation to the Board at a future Board meeting.

Pilot Improvements

West Basin has clearly established itself as an innovative leader in ocean-water desalination technology and research. This ongoing research has allowed the District to better understand the available technology that can be used and implemented to overcome the adverse challenges that ocean-water presents as a potable drinking water source. Fortunately, the District's proactive research perspective has positioned the District to evaluate and understand all possible treatment and process technologies that will yield the most efficient and solidly astute treatment system that the industry has to offer. The District is committed to finding the most reliable and cost-effective treatment technology to meet the long-term ocean-water desalination program needs.

The District is permitted to operate the ocean-water desalination pilot unit through the end of December 2006. In an effort to comprehensively evaluate all potential treatment technologies at a piloting level prior to moving into a full scale demonstration or full scale ocean-water desalination facility, the District believes that other pretreatment technologies and/or process control protocols should be evaluated prior to concluding the District's piloting efforts. Some of the other technologies the District is considering for evaluation include the use of a coagulant addition prior to the microfiltration and/or ultrafiltration pretreatment units and the effectiveness of a conventional pretreatment system versus a membrane pretreatment system prior to the reverse osmosis units. Staff is compiling a complete research list of additional research elements that details the associated costs, schedule, and permit extension requirements. Staff will bring the proposed program and cost requirements to the Board at a future meeting.

EL SEGUNDO POWER

El Segundo Power submitted a petition to the California Energy Commission (CEC) to postpone the payment of \$5 million into a fund that was established by CEC to study the long-term affects on marine life in Santa Monica Bay as a result of the Power Plant using ocean-water as cooling water to cool the El Segundo Power Plant steam turbines. In early November 2005, CEC heard and denied the petition resetting the first installment date of \$250,000 to December 3, 2005. El Segundo Power petitioned to have the installments deferred until a long-term power contract could be procured; thus, enabling the company to meet the payment obligations. El Segundo Power is investigating the possibility of terminating the approved permit and not pursuing the repowering of the two out-of-commission power units. NRG has yet to make a definitive decision.

U.S. DESALINATION COALITION

On Wednesday, November 16 the House Resources Committee met and successfully marked-up 15 separate authorization bills, including H.R. 1071, the Desalination Water Supply Shortage Prevention Act of 2005. The U.S. Desalination Coalition remains optimistic that H.R. 1071 will be approved by the full House before the end of this year's session. In addition, the Senate Energy and Natural Resources Committee approved S.1860, the Energy-Water Efficiency Technology Research, Development, and Transfer Program Act of 2005 as introduced by Senator Pete Domenici. The bill is designed to step up federal investment in water efficiency and supply technologies at the U.S. Department of Energy, and is now available for consideration by the full Senate. The U.S. Desalination Coalition is pleased with this outcome as S.1016 has avoided any dilution that may have occurred if the two bills had been combined. Furthermore, the Committee has pledged to work with Senator Martinez and lead cosponsor Senator Dianne Feinstein on moving S.1016 separately as stand alone legislation.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

None.

COMMITTEE STATUS:

This item was reviewed by the Water Resources Committee on December 6, 2005 and agendized to the December 19, 2005 Board meeting as information for discussion.

RECOMMENDED MOTIONS:

This item is for information only.

EXHIBITS:

None.