

# RESEARCH AND NATURAL RESOURCES HIGHLIGHTS

## October 2002

### Director's Office (Washington, DC and Denver, Colorado)

Research project proposals submitted Science and Technology (S&T) Program were reviewed. Scoring results provided by the reviewing teams were assessed along with other criteria to arrive at funding decisions for each project proposal. Results will be published in November. (Shannon Cunniff, 202-513-0682; Chuck Hennig)

Met with USGS Central and Western Region Management, and USGS National Research Program representatives to lay a framework for stronger research coordination and collaboration between USGS scientists, Reclamation scientists, and Reclamation resource managers. The framework is being drafted, but the objective will be to integrate and marry the unique niches and roles that each bureau provides. Reclamation's niche is focused on solution-oriented applied R&D focused on the needs of water managers and water users. USGS' unique niche is strong capability to advance basic research that is focused on gaining a better understanding of the natural processes and mechanisms associated with water and related resources as well as data acquisition and analysis associated with water use, demand, and supply on regional and national scales. A solid marriage of these two niches is essential to develop and deliver sound, affordable, practical tools and information for stretching water supplies and making good water-related decisions. (Chuck Hennig, 303-445-2134; Shannon Cunniff)

Announced the upcoming *Outreach Workshop – Stretching Agricultural Water Supplies* at the annual water users meeting that was hosted by **the Northern Colorado Water Conservancy District**. The workshop is sponsored by the Science and Technology Program, **Eastern Colorado Area Office**, and The Water Conservation Field Services Program in collaboration with Northern Colorado Water Conservancy District and the USDA. The workshop will be held in Greeley, Colorado, on February 19, 2003, and will focus on demonstrating and discussing modern and emerging techniques and tools that could help irrigated agriculture in Northern Colorado stretch agricultural water supplies. The workshop will be interactive and include discussions from irrigation districts and farmers on their most challenging issues where they could benefit the most from our efforts to advance tools and technologies. (Siegie Potthoff, 303-445-2136; Cliff Pugh 303-445-2151)

Briefed OMB on **Tularosa Basin** Desalination Research Facility Study and desalination research at Reclamation. (Shannon Cunniff, 202-513-0682)

Desalination Research Bill passes the House on October 7. (Shannon Cunniff, 202-513-0682)

Briefed Deputy ASWS on **Santa Cruz** Joint Venture/ASARCO cooperative agreement closeout and response to Congress on the inquiry regarding “failure to make payment.” This is the last of the cooperative projects Reclamation inherited from the Bureau of Mines. (Shannon Cunniff, 202-513-0682)

Met with Economic Research Service (ERS) and DOI's Office of Policy regarding ERS research effort to determine methods to assess the value of water not delivered due to federal action. Discussed potential joint cooperation in this and other research efforts. (Shannon Cunniff, 202-513-0682)

Briefed the National Academies' Earth Sciences and Resources Board on October 19 and the Western Coalition of Arid States on October 24 about the Science and Technology Program, our program roadmap, and our ongoing activities in water management research. (Chuck Hennig, 303-445-2134)

Held discussions with National Research Council's Water Science and Technology board on its cooperative assistance in evaluating the desalination research roadmap. (Shannon Cunniff, 202-513-0682)

## Upcoming Events

### November

**18-19** Participate in 25-Year Water Plan Meeting to support Jack Garner on this Assistant Secretary – Water and Science project., Phoenix , Arizona (Chuck Hennig, 303-445-2134)

### December

**4** Panel member on NWRA Science at the annual NWRA conference in Tucson, Arizona. Will provide overview of Science and Technology Program our focus on technology and tools for the water manager and water user (Shannon Cunniff, 202-513-0682)

## Improving Infrastructure Reliability

The initial design of the rotor turning gear for **Green Mountain Powerplant** was completed by Nathan Nakamoto. The design will be peer reviewed and components procured for installation. Installation (deployment) will be accomplished by plant personnel. The rotor turning gear safety device was developed using S&T funding to improve safety when performing the hazardous task of slowly turning large hydroelectric generator and motor rotors. (Roger Cline, 303-445-2293)

Performed electrical unbalance assessment tests on unit G2 at **Glen Canyon**. G2 had experienced a line-to-ground stator winding fault. The results of the test demonstrated that electrically removing a circuit following a winding fault is a viable option and allows a generator to be quickly returned to service, thus resulting in cost savings due to reduced outages. (Jim DeHaan, 303-445-2305; Nathan Myers; James Keller)

Installed battery cell equalizer modules at an **Eastern Colorado Area Office** communication tower site. The modules were designed and fabricated in house. These modules keep the battery cells at peak performance, extend the useful life of the battery, and signal when the cell is beginning to fail. The **Eastern Colorado Area Office** communication site consists of 23 cells with an equalizer module connected to each cell. An additional 58 modules have been prepared, tested, and adjusted for installation at **Mt. Elbert** switchyard later this year. The performance of the equalizer modules will be monitored for at least the next 2 years. (Jim DeHaan, 303-445-2305; Nathan Myers)

Subsequent to publication of the report "High-Voltage Generation" in January 2002, specification paragraphs were developed and transmitted to the **Mid Pacific Region** for issuance.

A contract to acquire and install a high-voltage generator for **Folsom Powerplant** is expected to be awarded in early calendar 2003, and the generator is expected to be operational in mid 2004. A strategic plan was developed to continue high-voltage generation research through the pilot project phase. High-voltage generation promises to reduce maintenance costs and environmental risks while improving efficiency and reliability. (Lori Rux, 303-445-2307)

Powerplant Life Extension research, in cooperation with efforts sponsored by the Power Resources Office, completed development of two powerplant equipment condition assessment tools in conjunction with the US Army Corps of Engineers, Bonneville Power Administration, and Hydro Quebec. The team also began development of other condition assessment tools. Life Extension promises to produce a set of tools to assist managers in making wise capital asset investment decisions. (Gary Osburn, 303-445-2297)

### Improving Decision Support

The interagency Watershed and River Systems Management Program (WaRSMP) Steering Committee at the USGS District Office **in Carson City, Nevada**. The steering committee discussed priorities and budget issues for the upcoming year. (Don Frevert, 303-445-2473)

#### Upcoming Events

##### November

- 18-22** WaRSMP team members and CADSWES experts will hold a work session in Boulder, Colorado, to focus on the **Truckee River** Operational Forecast effort. (Don Frevert, 303-445-)
- 18-20** The RiverWare and HDB Technical Teams will meet at the CADSWES offices in Boulder, Colorado (Don Frevert, 303-445-2473)

### Improving Water Supply Technologies

Proposals for S&T funding in the Water Treatment area were reviewed last month. Final decisions on funding will be made this month. (Michelle Chapman, 303-445-2264)

The Selenium Remediation project was mobilized at **Red Rock Ranch, California**, near Coalinga. The project will evaluate efficacy and economics of treating reused irrigation return flow to remove selenium and recover part of the water for irrigation use. (Scott Irvine, 303-445-2253)

In the Desalination and Water Purification Research & Development (DWPR) Program, 10 new financial assistance agreements were awarded at the end of September. Seven research and studies lasting 12 months, and 3 pilot-scale systems lasting 24 months. (Tom Jennings, 303-445-2130)

In 2001, Congress directed Reclamation, in cooperation with Sandia National Laboratories to evaluate the potential; for developing a desalination research center in the **Tularosa Basin of New Mexico**. An Executive Committee was formed to support the project and to ensure

stakeholder involvement. The Committee completed its study on schedule and Reclamation forwarded the report to Congress in September for review and possible funding. The report found the **Tularosa Basin** to be an ideal location to conduct brackish water desalination research and development because of its extensive brackish groundwater resources. Preferred and alternate sites for the facility were identified and studied near the **Alamogordo, New Mexico**. The report addressed the following goals and objectives: 1) Identify unique desalination research and development directions for a Tularosa Basin facility; 2) Formulate how the facility would complement other desalination centers; 3) Identify a regional, national and international role for the facility; 4) Develop a technically and economically sound facility design and operation and management structure; and 5) Develop a suggested path forward to accelerate the construction and operational capability of the facility following authorization and appropriation. (Tom Jennings, 303-445-2130)

Congress also directed Reclamation to partner with Sandia National Laboratories to develop a desalination technology research plan for the United States. We anticipate that the Research Roadmap, as it was termed, will be released in late 2002 or early 2003. Input for the Roadmap was obtained from a multidisciplinary group of experts from across the United States. The Roadmap examines national water needs and the desalination research and development efforts required to address them through the year 2020. Plans call for the Water Science and Technology Board of the National Research Council to review the Roadmap. (Tom Jennings, 303-445-2130)

The comprehensive Clearinghouse website was completed, reviewed, and approved. The website provides all information on the Desalination Program, such as products, reports, etc. Once funding is provided, the website will be made available to the public. (Tom Jennings, 303-445-

## Upcoming Events

### November

**19-21** The triennial research meeting for Desalination & Water Purification, Advanced Water Treatment, and the Yuma Coordination Team will be held at the **Yuma Area Office** to review research accomplishments of the last year and discuss new research efforts for FY03. (Michelle Chapman, 303-445-2264; Tom Jennings)

2130).

## Regional Reports

None