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Commissioner
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On

Maintaining and Upgrading the Bureau of Reclamation's Facilities to Improve Power Generation, Enhance Water Supply and Keep our Homeland Secure

Before the U. S. House of Representatives
Committee on Resources
Subcommittee on Water and Power
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Mr. Chairman, I am John W. Keys, III, Commissioner of the Bureau of Reclamation.

It is my pleasure to present the Department of the Interior's views on maintaining and upgrading Reclamation facilities to improve power generation, enhance water supply, and keep our homeland secure.

Reclamation's water and power infrastructure consists of over 470 storage dams and dikes; 58 hydroelectric plants; more than 300 associated facilities, consisting of canal systems, pumping plants, tunnels, pipelines, diversion dams; as well as a number of miscellaneous supporting drainage systems, fish facilities, structures, and buildings. As the nation's largest wholesaler of water in the U.S. and the 2 nd largest hydroelectric power producer in the U.S., Reclamation projects and much of the West depend on this infrastructure to ensure the efficient and reliable water delivery and power generation.

These water and power facilities are classified as either reserved or transferred works. Reserved works are those facilities owned by the U.S. and operated and maintained by Reclamation. Transferred works are those facilities owned by the U.S., but with contractual responsibility of the operation and maintenance (O&M) transferred to local irrigation districts. Approximately two-thirds of Reclamation's water and power facilities are transferred works; the rest are reserved works.

Construction of Reclamation's water and power infrastructure began over 100 years ago. The average age of these facilities now exceeds 50 years. Some of the components and replaceable equipment have well-defined design or service lives while many of the larger structures do not. In many cases the estimated service lives have been and continue to be exceeded. Reclamation attributes its success in lengthening these service lives to a commitment to preventive maintenance that has guided our O&M practices over the years.

Aging, of course, increases deterioration and the need for maintenance. Reclamation routinely evaluates the need to continue with preventive maintenance and repair activities versus the need to undertake major rehabilitation/replacement efforts. In addition to this ongoing maintenance, rehabilitation, and repair program, Reclamation has parallel responsibilities to maintain and improve existing facilities for power, water, and security purposes that are set out below.

Improving Power Generation

Reclamation's effort to upgrade and modernize its hydropower program has three components.

The first is preventive maintenance. While Reclamation's preventive maintenance program is a major step toward assuring the reliability and viability of Reclamation's power facilities, adequate funding of O&M is also key to our success. In order to assure adequate funding of O&M in the face of competing funding requests, Reclamation would like authority to fund power O&M from power receipts, instead of waiting for spending authority contained in future appropriations bills. We think that receipt financing could actually improve accountability to our customers if the legislation includes a provision for customer involvement in the development of O&M work plans. This would codify our current practice. Having the flexibility to take maintenance action more quickly can actually hold down costs and deliver the project benefits more reliably and predictably.

Reclamation presently has 80% of its O&M budget financed through revolving funds, up-front customer funding, or access to receipts via the Bonneville Power Administration. The additional authority that the President is proposing to the remaining twenty percent is to be funded through receipt financing. Most of that 20% is in the Great Plains and Mid-Pacific Regions.

As a result of this type of authority Grand Coulee is implementing a ten year ongoing efficiency improvement program which will increase power generating capacity at Grand Coulee Dam. Grand Coulee is already the United States' top-producing electric generating station and this program will make it even more productive.

The second component is uprating and optimizing existing assets. Reclamation appreciates Congress's support for our refurbishment, rehabilitation, and optimization efforts. Over the past two decades, one third of Reclamation's units have had approximately 1,784 megawatts of capacity added through the uprating and turbine runner replacement programs. The average increase in the capacity of these units has been 48 percent. This capacity has cost, on the average, $69 per kilowatt of additional capacity, which is extremely cost-effective. Opportunities still exist for additional capacity and optimization for both large and small plants and over the next 18 months Reclamation staff will be studying these opportunities. In addition, new technology, such as digital governors and microprocessor based relays, also improve the responsiveness of Reclamation power plants to system demands, including emergencies.

The third component is looking at the potential for low-head and micro-turbine generation. If opportunities are identified that are consistent with the President's National Energy Plan and other Administration policy, Reclamation would seek authorization to develop these opportunities. If FERC licenses are required we would work with the appropriate entities in the application process.

Enhancing Water Supply

Storage is, of course, the time-tested approach to new water supply. Our world famous Hoover Dam and its hundreds of sister dams and reservoirs in the Reclamation system are about storage. The question some ask is whether Reclamation will continue designing and building new storage in the face of the 21st century's budgetary and environmental challenges.

The answer, or at least the earliest stages of an answer, can be found in various studies and investigations currently underway. For example, this Committee's landmark 2004 CALFED legislation authorized the investigation of potential storage opportunities five locations, including at Shasta, San Joaquin, Los Vaqueros, North of Delta, and In Delta, all in California. In several cases the possibile options being considered may include expansion of older, existing projects.

Our recently completed "Initital Alternatives Information Report for the Upper San Joaquin River Basin Storage Investigation" illustrates how a 21st century storage project will be evaluated from both economic and environmental perspectives. The multiple uses of the new water to be stored must be carefully analyzed so that project cost allocations fairly reflect actual use. The environmental benefits must also be accurately captured and quantified. All stakeholders must have a seat at the appraisal and design tables and the quality of collaborative ingenuity will ultimately determine project feasibility. For example, new water stored upstream could be released down river during low flow periods both to meet environmental needs and then be made available to water users even further downstream.

As we visualize the potential benefits of new storage, we must also be realistic about costs. This Committee knows too well that steel, fuel, and concrete have all seen dramatic price spikes in recent months. Updating cost estimates can be daunting business, but we feel duty-bound to keep ourselves, project sponsors, and Congress fully updated on their status. The huge costs of developing new storage projects could be reduced by utilizing the current footprint of existing projects, as proposed in some of the CALFED storage investigations. We must also be aware that significant cost-sharing elements of new infrastructure projects, such as those being considered by CALFED, are a central element of determining whether projects are economically and financially viable.

We must also employ new tools as alternatives to new storage, and Reclamation has several for enhancing water supply that were unknown to prior generations of our Bureau. Let me touch on just a few.

In many Western river basins, the water needs of today are too great to simply await the development of new storage, which can take decades to complete. The Secretary's *Water 2025* program through Reclamation can help alleviate these pressures through innovative water management and conservation projects funded through cost-shared Challenge Grants. Just one example of the dozens of cost-shared grants we have announced under *Water 2025* is one we made to the Imperial Irrigation District in California to fund and strategically place four independent flow meter sensors along the All-American Canal to improve monitoring of water delivery, particularly during high and low flow periods into the Imperial Valley and at diversions to Mexico and the Coachella Valley. This project ensures that all three areas receive their proper water allotments. By making water distribution more efficient, these advanced technology sensors can reduce demand on the Colorado River by some 34,500 acre feet per year. The total project cost is $230,000 with a Reclamation contribution of $115,000, and represents a tremendous benefit to the sponsors, the Colorado River Basin, and to U.S. taxpayers.

A second tool is environmental innovation. In other words, finding ways to conserve natural resources, such as fish and wildlife, without reducing availability of water for agriculture and communities. Just one example is the Multi-Species Conservation Program (MSCP) recently launched in cooperation with California, Nevada, and Arizona. The MSCP will integrate efforts to protect several different species so that efforts on behalf of one will not compromise habitat for another. The cooperation of the states and other stakeholders has been inspiring, and includes 50/50 program cost sharing with the Federal government. The result will be water availability for human use that could not otherwise have been possible under today's law.

A third new tool, one we need legislation to create, would be a systematic rural water program for Reclamation. The Administration has submitted legislation to create such a program, and is working with members of the Congress on creating such legislation. The Administration also recently undertook a review of the many different federal programs that address rural water needs, and will make recommendations to better address those needs to a proposed Results Commission. Legislation to establish such a commission was recently submitted to Congress.

Maintaining Existing Assets

Where Reclamation Project water users are facing funding of O&M costs for a major rehabilitation or replacement, the use of the water user's reserve funds is initially considered. However, these funds are often not sufficient to cover the large amounts required for major rehabilitations and replacements. Long-term financing is often necessary. One example of a major rehabilitation is at Minidoka Dam on the Snake River in Idaho. After 100 years of continued use, the concrete of the Minidoka Dam spillway has deteriorated with visible cracking and wear at many locations across the spillway's 2,400-foot length. Current estimates suggest that the two irrigation districts may need to pay about $12 million over the projected construction period.

Borrowing to stretch out these payments over several years can be a challenge. Often water users cannot afford the loans obtained from private lending institutions or the private lending institutions are not willing to loan money because the United States holds title to the facilities and, therefore, Districts have no collateral to offer the lenders. The lack of a financing mechanism could lead to the gradual aging and deterioration of some of Reclamation's water infrastructure.

The Administration is currently exploring mechanisms to address this and other challenges relating to dealing with an aging infrastructure that in many instances has outlived its design life, but which cannot do so indefinitely.

Meanwhile, Reclamation's Safety of Dams program is certainly not an alternative funding source for maintenance and rehabilitation projects unrelated to safety.The Safety of Dams Act is quite clear that projects undertaken pursuant to it are limited to "the modification of structures which results from new hydrologic or seismic data or changes in the state of the art criteria deemed necessary for safety purposes." The Safety of Dams program is to protect public safety. It is not an accounting gimmick to relieve districts of extraordinary maintenance costs that do not fall within its clear definition.

Keeping our Homeland Secure

Following the terrorist attacks of September 11, 2001, the Bureau of Reclamation undertook extensive risk assessments of its inventory of water and power resources infrastructure. That inventory includes five Department of the Interior critical infrastructure facilities and an additional 275 dams and appurtenant facilities that could threaten the public if they were to fail. Reclamation's comprehensive security risk analysis program assesses threat, vulnerability, and consequences in order to identify priorities for fortification or other protective measures at critical water and power facilities. With the reinvention of our security program after 9/11 and the judicious application of our security resources, we have improved the security of our infrastructure, and will continue these efforts to reduce the risk at our facilities.

By the end of FY 2005, Reclamation will have completed the on-site risk assessments at all 280 critical facilities, and 180 of the most critical of those facilities will have completed decision documents for implementing enhanced security measures recommended in the assessments. All facilities will have completed decision documents by the end of FY 2006. To date, Reclamation has implemented 76.2% of the recommendations resulting from risk assessments at 55 critical infrastructure facilities.

Reclamation has completed physical fortifications on one critical infrastructure facility, is near completion of physical fortifications on four other facilities, and has made significant progress on mission and major mission critical facilities. Necessary guards and surveillance activities have been maintained at all key facilities, and enhanced levels of security will be initiated at several facilities in FY 2005 and 2006. Research is being conducted in cooperation with other Federal agencies to identify potential threats and vulnerabilities and develop response measures. While the initial additional costs for guards and surveillance activities in the aftermath of September 11, 2001 were treated as non-reimbursable costs to avoid

imposing hardships on the water and power users, beginning in FY 2006, Reclamation proposes that annual costs associated with guards and surveillance be treated as project costs subject to reimbursement based upon project cost allocations. New legislation is not needed to implement this policy.

In conclusion, Mr. Chairman, Reclamation, through its preventive maintenance philosophy, has successfully lengthened the service lives of many of its water and power facilities. As with many other things in life, aging can have significant effects and impacts on not only the facilities themselves, but on the need to dedicate an increasing amount of our resources into maintaining and upgrading our existing infrastructure. Reclamation will continue to address our aging infrastructure through its current maintenance practices and philosophies, where it is practical and economically feasible to do so. Similarly, with additional authorities and program resources, such as would be provided through direct financing arrangements, Reclamation can upgrade and enhance its existing facilities to optimize the delivery of services to the American public, while minimizing the financial impacts to the Federal Treasury and water users, and keeping these facilities secure from outside threats.

I am pleased to answer any questions.