

**SACRAMENTO MUNICIPAL UTILITY DISTRICT INPUT TO THE  
STATE WATER RESOURCE CONTROL BOARD'S FOURTH  
WORKSHOP ON STANDARDS FOR THE SACRAMENTO-SAN  
JOAQUIN DELTA ESTUARY**

**INTRODUCTION**

**Mr. Chairman and Members of the Board, my name is Richard G. Ferreira, Assistant General Manager and Chief Engineer for the Sacramento Municipal Utility District (SMUD). At the June 14 hearing, SMUD presented testimony regarding the importance of SMUD's Upper American River Project in meeting SMUD's utility obligations to meet load, keep generation adjusted to the load on a real time basis, and support SMUD's substantial programs to move toward a sustainable energy future and reduce greenhouse gas emissions through renewable resources and demand side management. At the time, the Board asked for more detail regarding how a shift from summer to spring releases would impact SMUD. This testimony responds to that request.**

**First let me express SMUD's support for the concern expressed by Mr. Feider. As Western's largest customer, we recognize that the Central Valley Project will continue to make substantial contributions to meeting water quality standards in the Delta. We request that you work with power interests to avoid severe adverse power impacts when possible. For instance, depletion of storage in key CVP power reservoirs below minimum power pool removes valuable capacity from the region's resource pool. In such situations, obtaining that water for Delta water quality control from other sources must be considered. SMUD joins Western in offering to work with Board staff to identify and try to mitigate impacts to hydropower during the next few months as the standards are developed.**

## **OVERVIEW OF IMPACTS TO SMUD**

The draft standards proposed by the Environmental Protection Agency would have serious impacts on SMUD's UARP. The EPA X2 standards require an additional release of 2.5 million acre feet from reservoirs tributary to the Delta between February and June of a critically dry year. Assuming the Board elects to allocate those additional releases to upstream reservoirs in a method consistent with the draft D-1630 proceedings, an additional contribution from SMUD reservoirs of 70,000 acre feet of stored water would have to be released between February and June of a critical year. The added spring releases from the UARP would reduce the generation of eight powerplants on the American river that is needed during the remainder of the year to meet customer demand with clean, renewable hydropower.

This loss of generating capability is a more serious impact than can be mitigated by simply occasional purchases of replacement power. Like water purveyors, utilities have an obligation to their customers to meet their electrical needs in a prudent and reliable manner. Just as a water district cannot rely on short term purchases of water in a drought to meet committed customer demand, SMUD cannot lose a firm hydroelectric resource and rely instead on spot electrical purchases to meet load. Replacement power cannot meet all the functions that the Upper American River Project provides, particularly the support of renewable resource with system control and regulation.

Hydroelectric power forms the basis of our resource plan at SMUD, which includes a careful balance thermal, renewable, and demand side resources, as well as purchased power and hydro. The great strides SMUD has made in developing demand side and renewable resources has largely been possible due to the clean, cost effective, and operationally flexible hydroelectric power SMUD operates and purchases from the Western Area Power Administration. Degradation of these hydro resources will have profound impacts, which I describe later, on SMUD's ability to continue making progress in this direction.

**In view of the fact that SMUD's power rights have no consumptive impact on the American River, and that Folsom Reservoir reregulates all SMUD's releases, SMUD strongly urges the Board to exempt non-consumptive hydro reservoirs from making releases to meet Delta Standards. Impairing SMUD's ability to capture spring runoff for later beneficial use would do little to solve the problems facing this Board, but could have serious adverse impacts to the economy and environment of the Sacramento region, as I will describe in my following remarks.**

### **BACKGROUND ON SMUD USE OF UPPER AMERICAN RIVER PROJECT**

**A brief background on how SMUD uses the UARP for power production is first provided so that potential impacts can be understood in context. Runoff in the Upper American River occurs largely in the November through June period, some of which can be diverted to reservoir storage, and is released later, when the demand for power is much higher, and its value is greater. Storage is also reserved for critically dry years, when inflow is inadequate to meet demand. SMUD utilizes generation from the eight powerhouses in the UARP for two primary purposes; system control and regulation and peaking capacity. Regulation is the way that utilities adjust generation levels in real time to match its constantly changing load. It is required to keep electrical service reliable, not only in Sacramento, but in the entire interconnected grid. This is accomplished by keeping units on line with automatic controls which adjust generator output in response to load changes. Many renewable resources, such as wind or solar power, increase SMUD's need for regulation to compensate for the variable output of energy from these sources.**

**Peaking power is generated during periods of heavy electrical demand on the SMUD system, primarily during hot summer days. In addition to releases required for system operation, about 240 GWh or 80,000 acre feet is needed to support the full 659 MW of capacity for the duration of the year's peak demand period. In all years, SMUD's reservoirs are operated to conserve adequate water supplies to meet these needs, even in a critical dry period, similar to the 1976-1977 drought. Any changes to dry year demands for releases have profound impacts on the planning and operation of a hydroelectric project.**

## **IMPACTS OF DELTA STANDARDS TO SMUD**

If the Board were to require such real time contributions from upstream reservoirs to increasing spring inflow to the Delta by 2.5 million acre-feet in a critical year, and D-1630 method are used to allocate responsibilities to upstream reservoirs including non-consumptive power projects, the following adverse results would occur:

First, SMUD's dependable capacity to generate power during peak hour demands in a critical dry year is reduced, as 70,000 acre-feet less stored water would be available to meet these needs. For example, loss of 70,000 acre feet in two successive critically dry years like the 1976 - 1977 drought would totally deplete the storage needed for peaking power production. Utilities relying on hydroelectric power must plan to meet load during critical hydrological periods, just as water purveyors do. Replacement of 660 MW of capacity with the operational features of hydropower is impossible, as siting and licensing constraints for new hydroelectric projects of this size are prohibitive. Today Sacramento fails to meet Federal standards for healthy air, therefore thermal powerplants beyond what SMUD is building now to replace Rancho Seco are not considered viable in Sacramento due to air quality problems. Remote thermal plants would have to be constructed, operated, and their output transmitted to SMUD, incurring annual costs of \$60 million. Such plants would emit 70 tons of air pollutants annually. A renewable power source this size, which does not impact the quality of Sacramento air basin, would have costs substantially higher.

These replacement costs would increase SMUD rates by six to ten percent. Impacts to residential, commercial, and industrial ratepayers would be significant. Price and reliability of electricity are key factors in attracting and retaining industry and jobs in a community. Higher utility bills increase living expenses for over one million residents of Sacramento County served by SMUD, and reduce disposable income adversely affecting the economy.

**Second, Power generated in spring months is worth typically half the value of summer peaking generation. If an additional 70,000 acre feet were released during spring rather than summer, the added cost to Sacramento ratepayers would be about an additional \$4 million per year. These additional costs would exacerbate the electric rate pressures noted above and lead to inflation in the Sacramento region since all SMUD customers will be effected.**

**Third, A white water rafting industry has developed on the American River, which is the third most popular run in the nation, and is entirely dependent on summer releases from SMUD reservoirs during the times when peaking power is produced. SMUD releases are coordinated with rafting requirements to support this important attraction. To the extent the present summer releases are shifted to spring, less water remains for summer releases and the rafting industry would suffer, as would the quality of the recreational experience, and the induced benefits for the local economy in the region.**

**Fourth, SMUD supports the President's Global Climate Challenge and has committed to reduce its CO<sub>2</sub> emissions to 1990 levels by the year 2000. SMUD's renewable and demand side resource programs are helping us fulfill that commitment, but those programs depend on the operational support and economic benefit provided by the UARP and the CVP. Hydroelectric resources help to regulate the variable output of these resources and carry load during outages of these resources. Reliable, economic hydropower helps SMUD to afford other sustainable resources. Reductions in the storage capability of the UARP would adversely effect these programs, reduce the benefits to the environment of pioneering a more sustainable energy future and Compromise SMUD's ability to meet the President's challenge.**

## **IMPACTS TO POWER ARE LARGELY AVOIDABLE**

**SMUD supports the Board's intent to improve water quality in the Delta. Previous Board proceedings on Decision 1630 contemplated excluding non-consumptive hydropower reservoirs from contributing to spring release requirements. If the Board exempts non-consumptive upstream power generating reservoirs from making additional spring releases, such users will refill downstream reservoirs as their operational constraints allow, and impacts to hydroelectric facilities like SMUD's UARP, and their diverse group of beneficiaries, would be avoided. SMUD urges the Board to retain the exemption for non-consumptive hydroelectric reservoirs from contributing to spring releases for Delta water quality standards.**

**Impacts to power production of the Central Valley Project can be minimized in at least two ways. Adopting standards which provide flexibility in critically dry years will reduce impacts to CVP dependable capacity. Avoiding severe drawdowns of key power reservoirs will also help mitigate adverse impacts to CVP power production.**

**I hope this provides the Board an insight to the impacts that Delta standards could have to the power generation at SMUD's UARP, and some ideas on how to avoid these impacts. I would be happy to answer any questions you may have .**