



IRRIGATION TRAINING AND RESEARCH CENTER  
California Polytechnic State University  
San Luis Obispo, CA  
www.itrc.org

## Agricultural Peak Load Reduction Program Newsletter

### Letter from Cal Poly Irrigation Training and Research Center

Contained in this newsletter are a few case studies summarizing how the CEC Ag Peak Load Reduction Program is benefiting water agencies and farmers throughout California. Cal Poly Irrigation Training and Research Center (ITRC) encourages you to read about these projects and possibly obtain ideas on how this grant program can work for you. At this time there are plenty of funds for this program, but in order to obtain these funds to benefit your district project, applications must be submitted to Cal Poly ITRC as soon as possible. So don't delay!

Feedback from district personnel throughout California has helped ITRC streamline the application process, making it easier for you to participate in this program. Cal Poly ITRC is also committed to helping potential participants apply for this program. If requested, ITRC staff will meet with the agency in person to provide as much support in filling out the application as possible. Please feel free to call Dan Howes or Darren Cordova at (805) 756-7408 with your questions and comments or to request a meeting.

Cal Poly ITRC wants to thank all the water agencies and people that have worked so hard to make the initial stage of the grant program such a success.

### Orange Cove Irrigation District Returns Savings to Farmers

Orange Cove Irrigation District has proposed a project to add a SCADA system, advanced metering, and automatic shutdown equipment

to help reduce peak load consumption. The district signs up individual farmers to shut down from 12-6pm Monday-Friday in return for a break in their water bill. The district uses the SCADA system to help the irrigation system react to the shutdown and startup of individual farmers during load curtailment.

Orange Cove Irrigation District is located in Fresno and Tulare Counties, approximately 30 miles southeast of Fresno and 20 miles north of Visalia.

The district proposes to add SCADA equipment to sections of their system that currently do not have it. Along with the SCADA system, the district is signing up farmers to shut down during peak periods for a rebate in water cost provided by the district. The district then will add a timer and electric valve to the farmer's turnout(s) at the farmer's request.

The state, farmers, and the district all benefit from this project. The district and farmers decrease power costs by running primarily off-peak. The district savings is passed directly to the farmer with a break in their surface water cost if they sign up for the program. Orange Cove Irrigation District can cover up to 65% of the cost of the project with the CEC Ag Peak Load Reduction Grant and it won't be long until the power savings pays the remaining project cost!

### Westlands Uses the Pump Repair/Retrofit Program to Lower Overhead

Westlands Water District is proposing to repair all of their pumps that have significantly low pumping efficiencies. The district estimates with these repairs they can conserve 10-20% of the energy they use which results in a direct savings on their power bill.

Westlands Water District is situated on the west side of the central San Joaquin Valley. Serving about 570,000 acres of irrigable land, this is the largest district in California.



The district owns and operates a large number of pumps within its boundaries. A number of these pumps have been targeted for repair because of low efficiencies. Budget constraints have postponed the repair effort, leading to increased power bills and overuse of electricity.

The district has now approached Cal Poly Irrigation Training and Research Center regarding the CEC Ag Peak Load Reduction Program Category 2 Pump Repair/Retrofit Projects. Westlands Water District is planning to repair all low efficiency pumps over the next year or so with a significant rebate from

the Program. The district is eligible for a grant up to 65% of the total repair cost.

The district benefits from the increased efficiency with a lower power bill. The state benefits from the improved efficiency by conserving electricity during this power emergency. Initial estimates indicate a possible curtailment of peak load between 2 and 3 MW with this conservation effort.

### **Turlock Irrigation District Provides a Beneficial Service to Their Farmers**

Turlock Irrigation District is located in Turlock, California. Interestingly, TID is both an irrigation water provider for farmers as well as a public utility providing power to local customers.

Farmers within the irrigation district have asked the district to assist them in setting up and applying for pump test and pump repair/retrofit grants through the CEC Ag Peak Load Reduction Program.



The district proposes to administer the grant through Cal Poly Irrigation Training and Research Center for individual farmers. Farmers will sign up for pump testing and repair/retrofit. The exact role the district will play has not been finalized at this time, but one proposal is that the district arrange the pump tester and/or the pump repair company for the farmers. TID works directly with farmers dealing with any questions they may have and assisting with the applications. Once the pump tester completes the rebate application,

TID collects and verifies they have met specific requirements outlined in CEC Pump Test Rebate for Water Agencies. TID sends the collected applications to Cal Poly ITRC where they are approved and a rebate check sent back within 30 days. The pump repair rebate procedure works essentially the same except the farmer fills out the applications with help from TID personnel.

The district provides a service that benefits farmers and farmers conserve energy, lowering their power bill and receive up to 65% of the pump repair cost from the CEC Ag Peak Load Reduction Program. The state grid benefits from the improved electrical efficiencies, reducing peak load.

### **Don't Let \$\$\$\$ Deter Your Interest**

The California Energy Commission is offering a low interest loan for the remaining project cost after the Ag Peak Load Reduction Grant. For more information call Ricardo Amon of the CEC at (916) 654-4019.

### **Additional Reservoirs Allow North Kern Water Storage District to Curtail Load**

North Kern Water Storage District proposes to add regulating reservoirs and make groundwater well modifications that will allow the district to shut down over 8 MW of power during on-peak periods.

Located in the San Joaquin portion of Kern County, North Kern Water Storage District encompasses nearly 60,000 acres of land. A portion of the water received is from the Kern River, supplemented with groundwater to supply customers.

The energy emergency caused projected energy rates to increase across the board. The district's large reliance on groundwater exudes over 8MW of load on the power grid during peak hours.

For the benefit of both the State of California and North Kern Water Storage District, the district proposed and designed a project, which would curtail almost the entire 8 MW of peak load. This

project includes the construction and use of storage reservoirs to supply water to users during the peak period, allowing groundwater pumps to be turned off. The project also includes well lining of older wells where there is a chance of casing failure.



A major benefit from this project is a lower power bill due to lower kWh usage during the peak period. Generally, power rates are 2 to 3 times higher during this period. An additional benefit is flexibility and service provided to customers, which tend to increase with the addition of these reservoirs.

### **Pipeline Replacement Project for Belridge Water Storage District Increases Existing Reservoir Storage**

Belridge Water Storage District is located on the west side of the San Joaquin Valley in Kern County. The district pumps water from the California Aqueduct to supply agricultural users.

Currently the district uses a 160 ft. long siphon pipe on one of the canals. With the average summer flow rate of 37.5 cfs, the 36" diameter pipe has a large head loss. An upstream reservoir must be kept at a relatively high water level to overcome the headloss. This results in less usable reservoir storage.

Replacing this pipeline with an unlined canal reduces the headloss, resulting in 5.1 acre-ft of extra storage.

This 5.1 acre-ft of storage translates into a peak kW reduction from the canal's main pumping station of about 143kW.

This project is defined as a Category 1 Project (High Efficiency Equipment), which is eligible for a grant of up to 65% of the total project costs.