

*Electrical contractor retrofits and tests the installation of the arc flash maintenance system on a breaker.*

## Arc Flash

Recently, a new set of guidelines were adopted by the National Fire Protection Agency regarding a potential hazard called "arc flash." An arc flash involves the release of electrical energy (explosion) when electricity finds a path to the ground or between electrical phases. The guidelines recommend that organizations assess the potential hazard associated with each electrical system, and label the potential hazard and the protective gear required to protect personnel. The District recently completed this assessment and labeling effort. The study showed that the majority of breakers in the plant have a hazard rating of 4, which is the highest hazard category that can be mitigated.

To protect staff and reduce the arc flash potential, the District used a combination of methods. In most areas, we installed maintenance switches that temporarily tighten the trip settings and reduce the energy that can be released from a system. The District also installed remote switches, which put the operators at a safe distance from the potential hazard. Finally, the District purchased arc flash "moon suits," which provide adequate protection when operating equipment with high arc flash potential.

The study and mitigation steps taken help build upon the District's strong safety culture.



## OLSD is On Its Way to 100% Sustainable Power

For nearly a year, Oro Loma Sanitary District has been conducting a pilot grease receiving study. The project involves the injection of grease, collected from local restaurant grease interceptors, into the District's existing anaerobic digesters. Through the digestion process, solids are broken down and methane is produced. This methane is sent to an engine-driven generator set, which produces electricity and heat needed for the treatment plant.

Historically, the digesters provide 2/3 of the gas needed for the engines. With the introduction of grease, that fraction has increased to 7/8. In addition to the ongoing construction of a 500 kW solar array, the pilot program is helping the District pursue its goal of self-producing all its electricity and gas

from renewable sources. The District is now experimenting with higher grease dosage rates, which are expected to increase the gas production further.

Based upon the success of the pilot program, staff has put plans and specifications out to bid for the construction of a long term facility.

This project is a great example of Oro Loma's entrepreneurial and action-oriented culture. After receiving several consultant proposals to study a potential project on a theoretical basis, staff asked, "Why not just do it?" We rented a tank and piping, bought a pump, and started the project the same week.

The results were extraordinary. Gas production from the District's digester system in-

creased by 30%, and tipping fees were used to pay for the rental costs. Staff's hands-on, proactive approach saved about \$30,000 in consulting fees, and we obtained superior results because the data collected represented actual conditions.

The one drawback of the program is that grease quality is highly variable; it includes debris like spoons, forks and other plastics, and requires frequent attention from the operations and maintenance personnel. General Manager Warner complimented the OLSD Operations and Maintenance Team by saying, "There is no one here afraid of hard work. The obstacles and challenges presented by the system are well within our team's capacity to overcome."

*Senior plant operators Manuel Talledo-García and Raul Saballos stand in front of the new grease-receiving tank.*

