FIRST GEA/GRC GEOTHERMAL EXCELLENCE AWARD

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On September 26 at the GRC Annual Meeting in Burlingame, two Geothermal Excellence Awards were presented for the first time jointly by the Geothermal Energy Association and the Geothermal Resources Council (GEA/GRC). These were presented live by Karl Gawell, Executive Director of GEA, over the Internet at the Town Hall meeting in the GEA Trade Show Hall at the Annual Meeting. The two awards, one for a Facility Excellence Award to the CalEnergy Minerals Recovery Plant in the Imperial Valley, CA, and the other for a Community Excellence Award to the city of Klamath Falls for their Community Geothermal Project, were announced at the Town Hall meeting. The CalEnergy award was accepted by Jim Turner, General Manager of the Minerals Recovery Plant and the Klamath Falls award was accepted by Todd Kellstrom, Mayor of Klamath Falls--both live over the Internet, since neither person could be present at the Town Hall meeting. The award is of curved glass with the appropriate etched lettering as shown below (Figure 1). The presentation can be viewed over the Internet at: <www.ishow.com/doe/>.

Figure 1. Geothermal Excellence Award.

Klamath Falls is located in southern Oregon on the east flanks of the volcanic Cascades. *Big Springs* and *Devils Teakettle*, hot springs that originally existed within the present city limits, were used by the Native Americans for over 10,000 years. They were then used by the early European settlers and more recently for space heating of homes for the past 75 years. There are over 500 geothermal wells in use for heating individual residences by means of a closed loop of pipe or downhole heat exchangers–thus conserving the water resource. The heat has also been used for pasteurizing milk and ice cream, in a laundry; for swimming pools and pavement snow melting systems; for heating city, county, state, federal government buildings, a hospital, churches, schools, a performing arts center and the Oregon Institute of Technology (OIT) campus buildings. A geothermal district heating system using over 200°F water is used to heat 20 downtown buildings and melt snow on the sidewalks (Figure 2). One of the side benefits to the geothermal industry in the U.S. and internationally, is the collocation of the Geo-Heat Center (GHC) on the OIT campus. The local experience has been observed and documented by the GHC staff and has become a show-place for visitors from all over the world (the city's sister city is Rotorua, New Zealand--also a geothermally-heated city). This living laboratory, along with the information dissemination and technical assistance provided by the GHC, has promoted the direct use of geothermal energy worldwide. Two international geothermal conferences have been held on the OIT campus, and international engineers have worked at the Center to gain added experience. The various geothermal uses in the community results in a savings of about 85 GWh/yr (300 billion Btu/yr), which is equivalent to saving $2 million in equivalent fossil fuel use annually. Additional information on the uses in Klamath Falls can be found in the *GHC Quarterly Bulletin*, Vol. 20, No. 1 (March 1999).

Figure 2. Klamath Falls Mayor Todd Kellstrom frying an egg on a geothermally-heated sidewalk (photo courtesy of Lou Sennick).

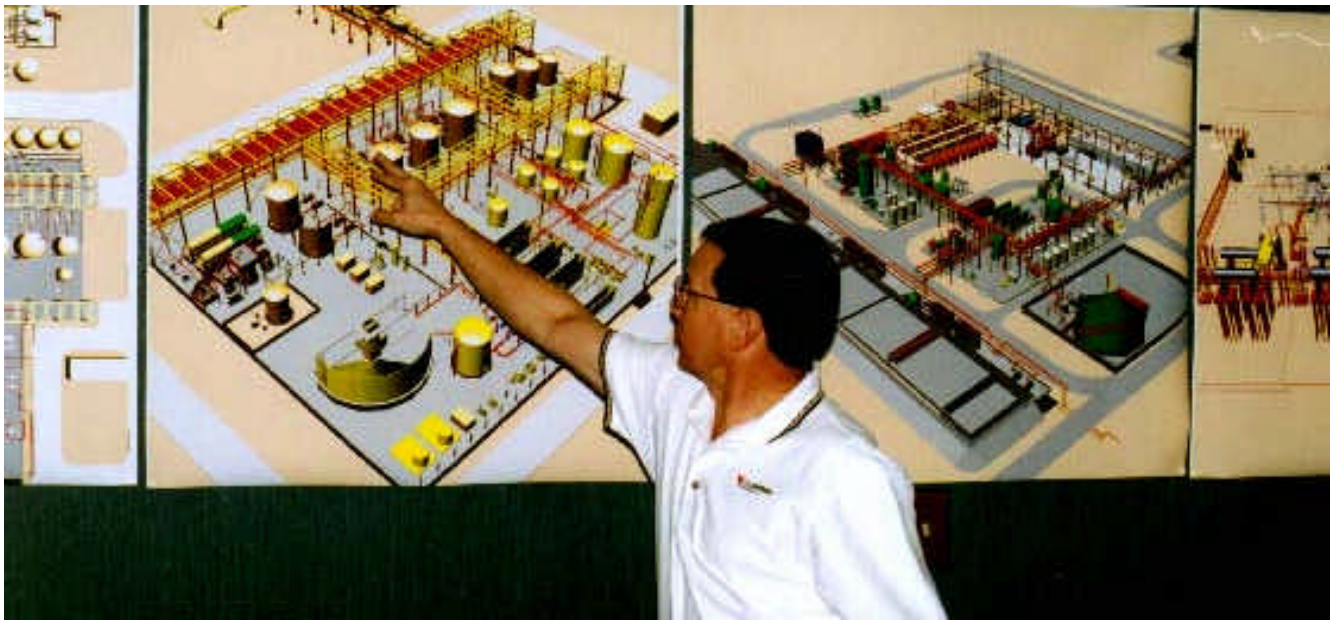

Figure 3. ***CalEnergy Vice President of Operations Jim Turner describing the minerals recovery facility (photo courtesy of Ted Clutter).***

The CalEnergy Operating Corporation's Minerals Recovery Plant is part of a $400-million expansion of their geothermal power complex on the shores of the Salton Sea in southern California's Imperial Valley. The new construction includes nearly 60 MWe of new geothermal electric capacity, and a plant to recover commercial-grade zinc from the geothermal brine produced for power generation. Unit 5, a 49-MWe facility, utilizes high-temperature spent brine from four other units to produce electricity for the minerals recovery operation. Only 20 MWe will be used for the zinc production, with the excess power sold into the California deregulated electricity market. The $280-million mineral recovery facility (Figure 3) uses a combination of already existing technologies that were modified for this project. Besides ion exchange, the facility employs solvent extraction and "electro-winning" to extract zinc from the spent brine that is supplied at a flow rate of 20 million lbs/hr. The brine contains 550 to 600 ppm of zinc, but high grade silica and manganese may also be extracted. The result is nearly pure zinc (99.99% pure) deposited on large cathodes; where, it is then removed and melted into 2,400 lb ingots. The project will recover an estimated 30,000 metric tons (66 million lbs) of zinc per year. Additional details on this unique "green energy" project combining geothermal electric power and an industry can be found in an article by Ted Clutter in Vol. 21, No. 2 (June, 2000) of the *GHC Quarterly Bulletin* or from the *GRC Bulletin*, Vol. 29, No. 1 (Jan./Feb. 2000).