Aspen
Environmental Group

Recent Accomplishments and Ongoing Projects

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Years of Service

Aspen Environmental Group has been serving California and the western United States with environmental assessment for energy, infrastructure, and water-related projects for fifteen years.

We look forward to many more years of service providing high quality, on-time products to all of our valued customers.

### Examples of New Aspen Projects

**CPUC**
PG&E's Delta Distribution Planning Area Capacity Increase Substation Project

Kirby Hills Natural Gas Storage Facility EIR/EIS

**Western Area Power Administration**
Sacramento Voltage Support

**Bureau of Reclamation**
Environmental Assessment for San Juan-Chama Water Contract Amendments

**Corporation of Delta, BC**
Technical Advice to Intervenor in small Canadian city for replacement of overhead and underground transmission lines

**Santa Clara Valley Water District**
Jacques Gulch Restoration Project

**Nellis AFB**
Joint Red Flag '06 EA, EBS

## Nuclear Power Plant Experience

**Diablo Canyon power plant is seeking to replace its steam generators.**

This year, we prepared two major environmental documents associated with California's largest nuclear power plants. Together, the Diablo Canyon Power Plant (DCPP) and the San Onofre Nuclear Generating Station (SONGS) provide about ten percent of California's electricity. Each power plant proposes to undertake a complex steam generator replacement project, and the California Public Utilities Commission (CPUC) must decide whether the project costs of over $800 million at each power plant should be covered by rate-payers. Aspen provided an EIR for each project to facilitate these decisions.

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## Renewables in California's Energy Mix

There are four preferred sources identified by the California Energy Commission to develop and operate electrical systems in the best long-term interests of consumers: 1) Energy Efficiency; 2) Demand Response; 3) Distributed Generation; and 4) Renewable Resources. Recent emphasis on developing renewable resources for the state, would result in significant environmental benefits, diversify energy supplies, reduce dependence on foreign sources, and lower the trade deficit.

In 2002, a California State bill was enacted creating a requirement for investor-owned utilities to generate 20 percent of their electricity via renewable energy by the year 2017, creating one of the highest renewables portfolio standards (RPS) in the country. The Energy Action Plan prepared by the California Energy Commission and CPUC identifies an even more aggressive goal: 20 percent by 2010. The Governor suggested a target of providing one third of the total California energy needs through renewable resources by 2020.

Since 1998, the state has invested $135 million per year in the Renewable Energy Program to increase the market of producers and the available energy mix. This diverse program could stimulate as much as 8,000 MW of renewable energy capacity. Renewable sources already account for slightly more than 10% of all generation, but must be increased by 1% per year in order to meet the RPS goals.

Current California online renewables projects have a total capacity of 488 MW, with an additional 600 MW to come online in 2005-2006. Renewable energy sources currently used in California are broadly broken down as follows:

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### We are Growing
and searching for key staff members

**Senior Biologist**
**Senior Project Manager**

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Please recommend us to professionals you know and trust.
We'd like to make them part of the team that works for you!

## Expansion of Water District Services

Aspen's services to water agency clients are continually growing. We have been providing full services to various local water districts and regional and Statewide water agencies, including development of project alternatives to help our clients come up with the most beneficial project both environmentally and practically. In addition to providing environmental documentation, we are also assisting our clients with permitting, engineering design, restoration planning, and mitigation monitoring. Our current ongoing projects and contracts include:

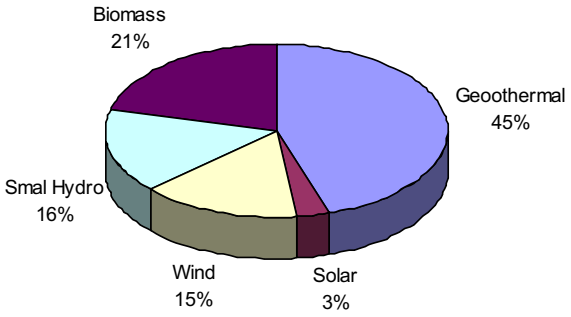
**Palmdale Water District (PWD)**. Aspen is preparing a joint EIR/EIS evaluating the impacts of sediment removal alternatives to restore water retention and flood control capacity for the Littlerock Reservoir and Dam on USFS land in Los Angeles County. Angeles National Forest Aspen developed six different project alternatives for sediment removal, involving detailed hydraulics analysis and preparation of a hydraulics technical report. The most feasible of these alternatives (grade control structure) was chosen as the proposed project to be evaluated in the EIS/EIR. The project intends to avoid impacts to the arroyo toad, while restoring reservoir capacity.

**South San Joaquin Irrigation District (SSJID)**. Aspen is helping the SSJID to become a new retail electric provider in northern California by preparing SSJID's application to initiate the CEQA process with San Joaquin County. SSJID's proposes to acquire electric distribution facilities from PG&E using excess funds from SSJID's hydroelectric generating facilities, and it seeks to own and operate the electric distribution system within southeastern San Joaquin County and several cities. Aspen is preparing an EIR, expected to be completed in late 2005.

**Santa Clara Valley Water District (SCVWD)**. Aspen is preparing a conceptual restoration plan, 30% engineering design report, EIR, and is obtaining needed permits for Jacques Gulch. The project will remove mercury mine waste deposited in a creek leading to Almaden Reservoir in an area covering nearly 1,400-feet of creek. The deposition of nearly 8-foot thick calcine (mercury processing waste, see photo) was the result of large material flows from an unstable mine waste disposal site in the historic Almaden Mining District, uphill from the reservoir. Following waste removal and site regrading, the gulch will be restored to a natural habitat similar to what was once found in the area.

**California Department of Water Resources**. Aspen's ongoing successful relationship with the DWR continues. We have gained expertise in facilitating emergency repairs and providing infrastructure support, due to our extensive knowledge about water agency systems and permitting processes.

## Renewables, cont'd




**Breakdown of Renewable Energy in California**

Despite many ongoing efforts, California has fallen behind schedule in obtaining new sources of renewable energy. RPS-eligible technologies, in addition to those shown above, also include: biodiesel, fuel cells using renewable fuel, and ocean waves, ocean thermal, and tidal current.

As incentives are created and the cost of production declines, Californians will see a more varied portfolio for its energy mix, which will be an added protection against relying upon the few and increasingly expensive sources used previously.

Two of Aspen's key clients, the California Energy Commission and the CPUC, are implementing the Renewable Energy Program collaboratively. Our team will be assisting these agencies in a number of different capacities. For example, one of the constraints in the use of renewable energy is the adequacy of transmission capacity. Currently, Aspen is assisting the CPUC in their review and approval of a proposed transmission line in the Antelope Valley area to enable the renewable energy generators to reach consumers. We have also assisted the Energy Commission to define development capacity, commercial status, and costs, and deployment constraints of several alternative generation technologies such as geothermal, solar, wind, hydro, and fuel cells.

**Jacques Gulch: The creek has cut down through calcine deposits (see details, left)**

## Nuclear Plants, cont'd

Since their origin, DCPP in central San Luis Obispo County and SONGS within Camp Pendleton in San Diego County have generated discussions about their potential risks.

For DCPP and SONGS to continue operation, replacement of the original steam generators is needed due to premature degradation from stress, corrosion cracking, and other maintenance difficulties. Refurbishing the plants would guarantee their operative life until expiration of licenses issued by the Nuclear Regulatory Commission, possibly longer (see inset, below).

Steam generator replacement would involve mobilizing large temporary workforces at these remote coastal plants and delivering massive replacement steam generators by barge. Major issues of concern for DCPP included impacts to San Luis Harbor and potential inconsistencies with the California Coastal Act. Issues for SONGS included coordinating the transport activities across Camp Pendleton and on Interstate 5, and temporary closure of San Onofre State Beach. Removing the original steam generators from within their protective containment domes would create more than one thousand tons of radioactive waste at each plant.

Our extensive experience with California's energy infrastructure aided our environmental review of these massive, controversial power plant investments. Present-day safety and security risks such as possible reactor-core accidents or acts of terror and damage caused by the once-through cooling water systems on ocean life were extensively evaluated. We also investigated how the NRC conducts oversight of nuclear power plants. Aspen gave a preliminary analysis of major environmental issues that warrant investigation with extension of the NRC licenses, after 2020.

The Final EIR for PG&E's Diablo Canyon Power Plant Steam Generator Replacement Project was released to the public in August 2005, and the Final EIR for SCE's San Onofre Nuclear Generating Station Steam Generator Replacement Project was released in September 2005. The CPUC proposed to approve both projects in October 2005. However, challengers continued to dispute the potential impacts of the DCPP project into early November.

## SONGS/Diablo Canyon: New and Continuing Risks and Impacts

The EIRs discussed above and prepared by the CPUC were to inform the debate over whether to fund massive rehabilitation of the nuclear power plants. Some have stated that continuing maintenance would perpetuate current power plant operations, including the present-day risks to safety, security, and marine life. The documents extensively discuss these aspects of the present day conditions as part of the environmental settings.

For the CEQA-mandated No Project Alternative, Aspen outlined the possible development scenarios for replacing or eliminating the need for the plants. The far-reaching needs for replacement power generation, transmission line upgrades, and conservation programs were identified. Compared to the unknown consequences of the No Project Alternative, replacing the steam generators was found to be an environmentally superior option.

## Work for Western Area Power Authority

During the past six months we have developed an excellent working relationship with Western Area Power Administration (Western) while working on the North Area ROW Maintenance Project EA to address Western's changes in operation and maintenance procedures along the North Area and California-Oregon Transmission Project (COTP) transmission ROWs. Aspen's team has been conducting biological and cultural surveys along 1,000 miles of ROW and access roads. Collected data are being digitized and brought into a central GIS system which will be used to avoid sensitive resources during maintenance activities.

Western is also working with Aspen on the Sacramento Area Voltage Support SEIS/EIR for a double-circuit 230 kV line between O'Banion/Sutter Power Plant and Elverta Substation/Natomas Substation. New transmission lines and transmission upgrades are needed to mitigate transmission line overload, reduce the frequency of automatic generation and load curtailment during the summer peak load periods, and help maintain reliability of the interconnected system operation.

## Cross-Border Energy Issues

Aspen is leading a team of expert subcontractors to support the Corporation of Delta (British Columbia, Canada) in its intervenor status in the British Columbia Utilities Commission's proceeding to evaluate a proposed submarine electric cable and onshore transmission line. The Vancouver Island Transmission Reinforcement Project, proposed by the British Columbia Transmission Corporation (BCTC), would pass through densely populated residential areas of Delta before crossing the Strait of Georgia. It would carry power to Vancouver Island and the southern Gulf Islands. Major concerns of the Corporation of Delta include congested rights-of-way, where the underground transmission line would be installed in city streets and other rights of way; seismic risk in the submarine portion; and the adequacy of the alternatives analysis completed by BCTC.

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## Kirby Hills Natural Gas Storage

Aspen was recently selected by the CPUC to prepare the environmental document for an application for a Certificate of Convenience and Necessity to construct and operate a natural gas storage facility. The objective of the proposed project is to convert a depleted gas reservoir into a storage facility for resale of natural gas.

Construction includes drilling of 10 injection/withdrawal wells and one water injection well, laying seven miles of flow and transmission pipelines, and various ancillary facilities including a metering and compressor station. On completion, the project will have the capacity to temporarily store 7 billion cubic feet of natural gas and inject or withdraw up to 100 million cubic feet per day. In addition to preparing the CEQA environmental document, Aspen will be responsible for scoping and agency coordination, public outreach, and construction monitoring.

## Aspen Consulting Engineers

Our Aspen Consulting Engineers division, based in Phoenix, is embarking on its fourth year of successful growth. The past three years have been both exciting and challenging. We have been pleased to serve such diverse clients as the Flood Control District of Maricopa County, the City of Phoenix, the Town of Marana and the Maricopa County Department of Transportation. Aspen has also been privileged to serve a number of private clients. All have assisted in our growth since our inception and we look forward to continuing these meaningful professional relationships in the coming years.

For detailed information about Aspen and our project experience, please visit our website.

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