B-25. TERMINAL FACILITIES

California's nearly 100 terminals receive petroleum and petroleum products by tanker, barge, pipeline, rail or truck. Most of California's terminals are marine terminals. At these facilities petroleum or product is transferred from or to tankers or barges. Tankers loaded with Alaska North Slope petroleum, for example, enter marine terminals at northern and southern California, where the petroleum is then sent to refineries by pipeline for processing. An example of pipeline receipts of petroleum at a terminal is heavy California petroleum produced in the Bakersfield area that is pipelined to a terminal at Martinez. From there it can be loaded onto tankers for export to Pacific Rim countries.

Terminals also serve as refiner's wholesale distribution points for products. Product, such as gasoline, is sold to distributors (jobbers) who then sell to consumers through the distributors' own retail stations. The distributor may also resell the gasoline to other station dealers. Gasoline can also be sold directly to station dealers from the terminal. The marketing structure differs depending on the type of product being sold.

A terminal can be linked with several refineries and storage facilities and be supplied by privately-owned pipelines or a common carrier line. Total capacity at a terminal can range from a few thousand barrels to a few million barrels. The most apparent equipment at a terminal are the tanks used for storage and separation of different product grades. The number of tanks can range from a few to more than 70. Other equipment found includes piping, pumps, valves, and meters needed for bulk receipts and for loading racks used for small deliveries to trucks. Marine terminals have vessel length and water depth limits that dictate the size of tankers that can off-load at the facility.

Permitting Issues. Some of the environmental and safety issues associated with permitting petroleum and petroleum product terminals include:

- Changes in visual quality
- Disturbances to vegetation and wildlife
- Emissions from floating roof tanks
- Potential water and soil contamination from earthquake-damaged tanks
- Increased tanker traffic and potential for spills at marine facilities

REFERENCES

a) *U.S. Petroleum Refining, Meeting Requirements for Cleaner Fuels and Refineries,* Volume I, National Petroleum Council, August, 1993. This document is a comprehensive assessment of how environmental regulations impact the petroleum refining industry and U.S. consumers.

b) *Petroleum Terminal Encyclopedia,* Seventh Edition, 1994, Stalsby/Wilson Press. This document contains a complete listing of terminals in California and other states including information on the type of terminal, its capacity and operating hours, the terminal operating company, how it receives product or crude oil and what methods of outloading are used.

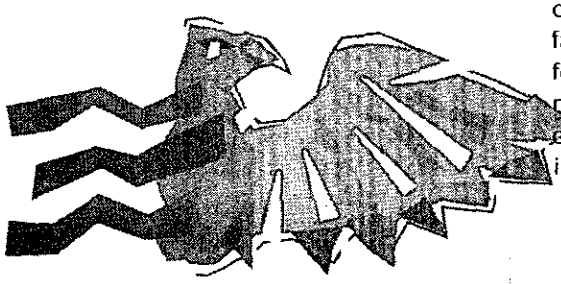
c) *Fuels Report,* California Energy Commission, December, 1995, Publication No. P300-95-017. The *Fuels Report* describes emerging trends and long range forecasts of the demand, supply and price of petroleum, petroleum products, natural gas, coal and synthetic and other fuels. It is the state's principal fuels policy document.

APPENDIX C:
FEDERAL & STATE AGENCY DESCRIPTIONS

This section provides an overview of the federal, state and public agencies that can be involved in permitting an energy facility, their jurisdiction, and their permitting responsibilities, where applicable. It is noteworthy that a key factor in successfully permitting a new energy facility is local involvement and participation in the permitting process, from beginning to end.

Although the following inventory of interested or affected federal and state agencies might seem overwhelming, each agency listed in this section may not be involved in every power plant project. Conversely, a specific project may involve an agency that is not discussed here, although this list is fairly comprehensive. The involvement of specific agencies depends on many factors, including the ownership status of the land, and the environmental resources and public facilities affected.

The purpose of this list is to inform local governments of the roles and responsibilities of potential participants in the permitting process. It is not meant to imply that every agency must be consulted as a permitting authority. This compilation also suggests ways for local government to become involved in the permitting process.



FEDERAL AGENCIES

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) is responsible for licensing hydroelectric facilities, including related electric power lines; regulating the interstate sale and transmission of electricity and the transport of oil and natural gas, including the review of interstate electric power rates and interstate power sales contracts; and administering the Public Utility Regulatory Policies Act (PURPA) of 1978. FERC has rate jurisdiction over electricity sales and transmission in interstate commerce by investor-owned utilities (IOUs), including sales to publicly owned systems. This jurisdiction directly affects the publicly-owned utilities' decisions on whether to purchase power from the IOUs or to acquire their own resources. FERC also establishes rates for the transportation of oil and natural gas by pipeline, and the valuation, or actual value, of such pipelines.

Gas pipeline companies must apply to FERC for certificates of approval to construct and operate new interstate pipeline facilities, to maintain existing facilities, make connections, provide new services or modify existing service, abandon facilities, and transport natural gas for industrial users. FERC also regulates the rates that oil pipeline companies charge to transport oil in interstate commerce. Tariffs, the licenses that permit oil pipeline companies to charge specific rates, must be filed with FERC for review.

FERC is the lead agency and performs environmental reviews under the provisions of the National Environmental Policy Act (NEPA), issuing licenses to construct and operate non-federal hydroelectric power projects, and license exemptions for small hydro projects. FERC also certifies "qualifying facilities" (QFs) owned by independent power producers. QFs are non-utility power producers that qualify to supply generating capacity and electric energy to electric utilities. The utilities must purchase this power at a price approved by state regulatory agencies.

Local governments can participate in FERC's review of energy projects through this agency's role in Environmental Assessment (EA) and Environmental Impact Statement (EIS) proceedings under the mandates of NEPA. This includes participating in public hearings and workshops, and providing written comments on development proposals.

Bureau of Indian Affairs

The Bureau of Indian Affairs (BIA), Sacramento Area Office (SAO) and its respective Agencies are responsible for managing approximately 470,000 acres of federally owned (individually owned/tribal/government owned) land in California. These lands are defined as follows:

Individually owned land means land or any interest therein held in trust by the United States for the benefit of individual Indians and land or any interest therein held by individual Indians subject to Federal restrictions against alienation or encumbrance.

Tribal land means land or any interest therein, title to which is held by the United States in trust for a tribe, or title to which is held by any tribe subject to Federal restrictions against alienation or encumbrance, and includes such land reserved for Indian Bureau administrative purposes. The term also includes lands held by the United States in trust for an Indian corporation chartered under Section 17 of the Act of June 18, 1934, 948 Stat. 988; 25 U.S.C. 477).

Government-owned land means land owned by the United States and under the jurisdiction of the Secretary which was acquired or set aside for the use and **Individually owned land** or **Tribal land**.

The BIA's programs provide for the protection, orderly development and use of these lands and resources in conjunction with tribal governments, individual Indian landowners and, when necessary, city, county, state and local entities. Tribal and individual Indian involvement is obtained prior to the BIA taking any action on behalf of its clientele.

For energy facilities, the BIA is the lead agency under NEPA, the federal equivalent of CEQA, if the project crosses BIA-administered land. Other federal agencies and/or other private entities or state and local governments are responsible for administering projects which cross their respective land. The BIA issues a Grant of Easement for Right-of-Way over Indian Lands for energy facilities including wells, pipelines, electric transmission lines (Act of February 5, 1948; 62 Stat. 17, 18; 25 U.S.C. 323-328; 25 CFR part 169).

The regulations contained in 25 CFR 169 do not cover the granting of rights-of-way upon tribal lands within a reservation for the purposes of constructing, operating, or maintaining dams, water conduits, reservoirs, powerhouses, transmission lines or other works which shall constitute a part of any project for which a license is required by the Federal Power Act. The Federal Power Act provides that any license which shall be issued to use tribal lands within a reservation shall be subject to and contain such conditions as the Secretary of the Interior shall deem necessary for the adequate protection and utilization of such lands (16 U.S.C. 797 (e)). In the case of the tribal lands belonging to a tribe organized under the Act of June 18, 1934 (48 Stat. 984), the Federal Power Act requires that annual charges for the use of such tribal lands under any license issued by the Federal Power Commission shall be subject to the approval of the tribe (16 U.S.C. 803(e)).

Depending upon the potential impact of a particular energy project, other federal agencies, city, county and local governments and the general public can participate in the BIA's review of energy projects through graphic Environmental Assessment (EA) and/or Environmental Impact Statement (EIS) proceedings under the mandates of NEPA. This includes providing comments on development proposals and determining the scope of input from other entities.

Bureau of Land Management

The Bureau of Land Management (BLM) is responsible for managing approximately 17.5 million acres of federally-owned land in California. The BLM's programs provide for the protection, orderly development and use of these public lands and resources. Virtually all development on or requiring access across lands under BLM management requires one or more use or authorization permits from this agency.

For energy facilities, the BLM is the lead agency under NEPA, if the project crosses BLM-administered land, and there are no other federal agencies with a greater degree of involvement. The BLM issues a right-of-way grant (rather than an easement) for energy facilities including wells, pipelines, electric transmission lines, and power plants (43USC 1701: Title V of the Federal Land Policy and Management Act of 1976). With respect to oil and gas pipelines, BLM is the lead agency under the Mineral Leasing Act of 1920 as amended (30 U.S.C. of 185) issuing the right-of-way grant if the project crosses any federal lands with the exception of those lands in the National Park Service, lands held in trust for an Indian or Indian tribe and lands on the Outer Continental Shelf.

As part of the review for the right-of-way grant, the agency must consider the direct and cumulative effects of the entire proposed new energy facility and its ancillary facilities rather than focusing on only those effects to BLM administered lands. For example, BLM considers the impacts associated with the entire length of a electric transmission line under its jurisdiction including those to non-federal lands and the existing electrical system.

Local governments can participate in the BLM's review of energy projects through EIS proceedings under the mandates of NEPA. This includes participating in public hearings and workshops, and providing written comments on development proposals.

U.S.D.A. Forest Service

The U.S. Department of Agriculture — Forest Service (USFS) is responsible for managing approximately 20.5 million acres in 18 national forests in California. Usually, the USFS acts as a reviewing agency for the NEPA lead agency. The USFS is, however, the NEPA lead agency if the energy project crosses a large amount of USFS-administered land, and there are no other federal agencies with a greater degree of involvement (such as in cases when the Mineral Leasing Act applies).

Energy facilities are the subject of USFS special use authorizations if these activities include: archaeological reconnaissance, access roads, electronic sites, or right-of-way grants (electric power line easements) for electric power lines or any other use occupying National Forest System lands. Oil and gas and geothermal steam resources may be leased from the U.S. Department of the Interior. The USFS regulates the surface uses associated with these leases.

Local governments can participate in USFS review of energy projects through EIS proceedings under the mandates of NEPA. This includes participating in public hearings and workshops, and providing written comments on development proposals.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (Corps) protects the waters of the U.S. The Corps is required to maintain the quality of navigable waters by regulating development that would affect wetlands, marshes, and swamps; protect rivers, streams and wetlands from unreasonable alteration or destruction; and control dumping of dredged material into the nation's waters. The Corps issues permits for the discharge of dredged or fill materials into the waters of the U.S. The Corps also issues permits for activities in or affecting the navigable waters of the U.S.

Regarding energy facilities, the Corps requires a Rivers and Harbors Act Section 10 permit if the proposed power project will obstruct or alter navigable waters, including wetlands. The Corps mandates a Clean Water Act Section 404 permit if dredged or fill material will be discharged into navigable waters. This Section 404 permit application also requires a Waste Discharge Requirement permit (or waiver) or a Section 401 Water Quality Certification from the applicable California Regional Water Quality Control Board. In addition, the Corps is required by federal law to consult with state and federal wildlife agencies regarding any project impacts on aquatic habitats and on federal endangered species.

Local governments can participate in the Corps' review of energy projects through EIS proceedings under the mandates of NEPA. This includes participating in public hearings and workshops, and providing written comments on project proposals.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) is responsible for conserving, protecting and enhancing fish and wildlife habitats and plants. Its jurisdiction covers wild birds and mammals, federally-listed endangered animal and plant species, certain marine mammals, inland sport fisheries, and specific fishery and wildlife research activities.

Regarding energy facilities, the USFWS is concerned with the impact of proposed projects on fish and wildlife habitat and plants under the federal Endangered Species Act. The USFWS consults either formally or informally with the project developer and other interested parties to determine project impacts. The USFWS issues a "Jeopardy Opinion" on the proposed project if the finding is made that the continued existence of a species is in jeopardy. The Jeopardy Opinion discusses the project's potential impact on federally-listed endangered species, mitigation measures and species conservation recommendations.

If no federal agencies are involved with the proposed project through per-mitting or funding, but a federally-listed endangered species may be subject to an incidental taking or removal as defined by the Act, a conservation plan is developed under the Act's Section 10 permit process. This includes the voluntary participation of state and local agencies, and usually requires habitat compensation and enhancement measures such as setting aside an area of protected, undeveloped land as a permanent preserve.

Local governments can participate in USFWS' review of energy projects through EIS proceedings under the mandates of NEPA. This includes participating in public hearings and workshops, and providing written comments on development proposals.

U.S. EPA

The U.S. Environmental Protection Agency (EPA) has responsibility to protect the environment and oversee programs on air and water pollution, solid waste, and hazardous substances. The EPA administers the Clean Air Act, which established air quality standards for key pollutants to be attained in all regions of the country. The EPA also administers national programs on water pollution control and groundwater protection. It regulates hazardous waste injection wells, sets standards for land disposal of hazardous wastes, and administers the federal Superfund to clean up toxic waste sites.

Most important to energy facility permitting is the EPA's role in maintaining air quality. EPA requires that the state have a program to attain and maintain the national air quality standards. The state's program is overseen by the California Air Resources Board (CARB) and implemented by regional Air Pollution Control Districts (APCD) or Air Quality Management Districts (AQMD) for the following air quality issues:

a) Prevention of Significant Deterioration (PSD) review and facility permitting for power plant construction. PSD review applies to criteria pollutants whose ambient concentration levels are lower than corresponding National Ambient Air Quality Standards (NAAQS).

b) New Source Review (NSR) facility permitting for power plant construction. NSR applies to criteria pollutants whose ambient concentration levels are higher than the corresponding NAAQS.

c) National standards of performance and a comprehensive permit program for major stationary sources.

d) National emission standards for hazardous air pollutants.

Not all districts have the authority to issue PSD permits. Some states are delegated the authority to issue the permits and some issue the permits through their rules which are part of their State Implementation Plans. For those districts which do not have the authority to issue such permits, EPA is the permitting agency.

The EPA's activities to regulate and preserve water quality are also important to energy facility permitting. EPA administers the federal Clean Water Act in conjunction with the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). The EPA imposes pretreatment standards for introduction of pollutants into publicly-owned treatment works (POTWs), and prohibits the discharge of oil or hazardous substances into or upon the navigable waters of the U.S.

Local governments can be involved in EPA's review of energy projects through proceedings initiated at the local or state level. For example, regarding air quality impacts, EPA submits comments to the local AQMD or APCD during the Authority to Construct permit process, and to the California Energy Commission during the Application for Certification process. EPA does not hold its own independent hearings or invite public comment on these proceedings except in cases where it is the permit authority, i.e., when the local air district does not have PSD authority. The same is true for water quality impacts, where EPA submits comments to the RWQCB or the SWRCB during those agencies' proceedings.

National Park Service

The National Park Service's (NPS) statutory mandate is to conserve scenery, natural and historic objects and wildlife, and to provide for the enjoyment of those resources in a manner that will leave them unimpaired for the enjoyment of future generations. The NPS has jurisdiction over all federally-designated national parks and a large variety of other types of parks, monuments, preserves, and memorials. It also administers a variety of federal reservations in the District of Columbia.

Energy facilities are the subject of NPS permits under certain limited circumstances. In general, new energy project development is not allowed in units of the National Park System, unless authorized by the law establishing the park unit. This is considered a consumptive use of resources, which is prohibited by the laws governing the management of the National Park System. Energy and communications transmission lines and pipelines for water can by granted a "right-of-way" permit if there is adequate mitigation, no resource damage, and no prudent alternatives to using park property. Pipelines for oil or gas can be permitted only if this type of development is specifically authorized in the legislation for the park unit involved.

If energy facilities have already been developed in an area where a new park is to be created, those activities might be allowed to continue until the existing permit expires. This depends upon the nature and terms of the existing permit. If the land is in private ownership, the value of these existing facilities could be considered in determining the appraised value of the property to be paid if the property is acquired by the United States for park purposes.

Local governments can be involved in NPS review of energy projects through EIS proceedings under the mandates of NEPA. This includes participating in public hearings and workshops, and providing written comments on development proposals.

U.S. Bureau of Reclamation

The Bureau of Reclamation (Reclamation) is authorized both administratively and congressionally to construct water resources projects throughout the 17 Western states, including hydroelectric power facilities.

Reclamation and the Federal Energy Regulatory Commission (FERC) work together to ensure timely development of renewable hydroelectric power resources at existing Reclamation facilities. Reclamation reviews FERC applications and associated exhibits, studies, and environmental documents for hydroelectric projects covered by the Federal Power Act and recent amendments.

Reclamation is authorized to grant leases of power privilege to non-Federal entities for the development of hydroelectric power plants under its jurisdiction where Federal hydroelectric facilities are authorized. Lease of power privilege is a contractual right given to a non-Federal entity to utilize, consistent with project purposes, water power and storage from Reclamation projects for electric power generation.

Reclamation is agreeable, under certain conditions, to the development of hydropower by non-Federal entities at Reclamation projects provided that it is compatible with the authorized purpose of the project and provided the Federal hydroelectric facilities have not been authorized for development. Reclamation issues permits or easements for the overhead crossing of Reclamation facilities by transmission lines, also called a facility crossing license. This license is usually issued to investor-owned utilities or municipal utilities.

Western Area Power Administration

The Western Area Power Administration's (WAPA) has no siting authority. It's primary function is to market and transmit energy generated by federal government power projects. In the western states, these power sources are U.S. Bureau of Reclamation and U.S. Army Corps of Engineers hydroelectric facilities. WAPA also constructs or upgrades power lines, and operates and maintains more than 16,000 miles of electric power lines in the West. Its major customers include municipal utilities, rural irrigation districts, and some federal facilities such as military bases.

When WAPA develops electric power lines it obtains permits from other affected agencies. Normally, WAPA is the NEPA lead agency when it proposes an electric power line project, since it usually has the greatest degree of federal involvement. In this situation, it is responsible for overall project approval or rejection. When other utilities or agencies need to cross existing WAPA lines, WAPA will evaluate and issue a crossing permit if one of its transmission or distribution lines will be crossed by a private or municipal utility line.

Local governments can be involved in WAPA's review of energy projects through EIS proceedings under the mandate of NEPA. This includes participating in public hearings and workshops, and providing written comments on development proposals.

STATE AGENCIES

California Energy Commission

The California Energy Commission is the state's principal energy planning organization. The Energy Commission has jurisdiction over proposed thermal power plants with a generating capacity of 50 MW or more, including transmission lines from the power plant to the point where the line joins with a utility's inter-connected transmission system, related pipelines, and other appurtenant structures.

The Energy Commission issues one permit or certificate which encompasses all state, regional, and local agency permits. The Energy Commission's Notice of Intention (NOI) and Application for Certification (AFC) project evaluation and permitting process is the functional equivalent of the CEQA process. Other interested or affected agencies participate in the NOI/AFC process in lieu of the CEQA process.

In some circumstances, the Energy Commission will issue a Small Power Plant Exemption (SPPE), which exempts a proposed power plant and related electric power lines from the Energy Commission's siting jurisdiction and the NOI/AFC process. In order to qualify for the exemption, the proposed project must be 50-100 MW in size, pose no substantial adverse environmental impacts, and be in conformance with the Energy Commission's most recent adopted forecast of electricity demand. The SPPE is the equivalent of a Negative Declaration of environmental impacts under CEQA. If a SPPE is granted, the project is referred to local agencies and follows their permit processing procedures.

If the project is a thermal power plant with a generating capacity of 50 MW or more and is proposed by an investor-owned utility (IOU), the Energy Commission is the lead agency but the California Public Utilities Commission (CPUC) must also issue a Certificate of Public Convenience and Necessity (CPCN) to approve the project. In this case, the CPCN is limited to a review of cost effectiveness and reasonableness. The Energy Commission and CPUC procedures run simultaneously, but a CPCN is normally granted if the facility is certified by the Energy Commission. The CPUC's role in regulating IOUs is discussed further below.

If a project is proposed in the California coastal zone, the Energy Commission is required to coordinate its review with the California Coastal Commission (CCC). Similarly, if the project is proposed in the San Francisco Bay zone, the Energy Commission will coordinate its review with the San Francisco Bay Conservation and Development Commission (BCDC).

Local governments can be involved in the Energy Commission's review of energy projects through either the NOI/AFC or SPPE processes. The Energy Commission staff consults closely with local agencies to ensure that proposed power-plants comply with local ordinances, regulations, and standards. Staff and Commissioners conduct numerous public hearings and workshops throughout these proceedings, actively soliciting public comment on all proposals under consideration. Local governments may also seek formal intervenor status in the Energy Commission process.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates the rates, safety and standards of service of privately owned and operated natural gas, electric, steam, pipeline, and transmission line utilities. These utilities are known as investor-owned utilities, or IOUs. The CPUC does not regulate municipal or district-owned utilities. The CPUC's primary objective is to ensure adequate facilities and services for the public at reasonable and equitable rates, consistent with a fair return to the utility on its investment. It is also required to promote energy and resource conservation through its various regulatory decisions.

In the absence of Energy Commission jurisdiction, energy facilities proposed by the IOUs are often the subject of CPUC permits. The CPUC conducts a CEQA review, with some minor additional steps. The agency prepares an Environment Impact Report (EIR) and solicits input from affected local agencies. Final project approval authority rests with the CPUC. If the CPUC finds that the project is necessary and in the public interest, the CPUC issues a Certificate of Public Convenience and Necessity (CPCN) to approve the project.

If the proposed project is under the Energy Commission's jurisdiction, i.e., a thermal power plant with 50 MW or more net generating capacity, the Energy Commission is the lead agency, issuing its own Certificate. The CPUC also issues a CPCN on the project, but the CPCN is limited to cost effectiveness and reasonableness. The Energy Commission and CPUC procedures run simultaneously, but a CPCN is normally granted if the facility is certified by the Energy Commission.

Local governments are involved in CPUC review of energy projects through the CPCN proceeding. Local agencies can participate in workshops and hearings, and provide written comments on proposals throughout the CPCN process.

State Lands Commission

The State Lands Commission has jurisdiction over public lands of two distinct types — sovereign and school lands. Sovereign lands include the beds of navigable rivers, lakes, streams and sloughs as well as tidal and submerged lands out to three miles. Sovereign lands are held in trust and they may not be sold. School lands include what remain of nearly 5.5 million acres throughout the state, originally granted to the state by the federal government to support public education. The state retains surface and mineral ownership of approximately 570,000 acres and mineral rights to an additional 760,000 acres.

Specific to energy facilities, anyone proposing to use such state-owned lands must obtain a Land Use Lease from the SLC. These leases are required for energy facility projects such as oil terminals, oil and gas pipelines, and electric transmission lines. In addition, SLC authorization is required for dredging, mining, and oil, gas or geothermal exploration activities. Anyone proposing to explore for geothermal resources on state-owned lands, or public lands in which the state holds the mineral rights, must obtain a Geothermal Exploration or Prospecting Permit or lease from the SLC.

An Exploration Permit is used for information-gathering only. It does not give the applicant any preferential right to a geothermal development lease. The Prospecting Permit differs from the Exploration Permit. The Prospecting Permit is exclusive and conveys preferential rights to the applicant for later geothermal leases upon discovery of geothermal resources in commercial quantities.

Geothermal exploration and development are treated separately for CEQA purposes. An exploratory well is defined as one which is not closer than one-half mile from a well deemed capable of producing geothermal resources in commercial quantities. The Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR), discussed below, serves as the lead agency under CEQA in all counties except Imperial (where CEQA authority rests with the county) for any project which proposes to drill up to six exploratory wells. As a responsible agency, the SLC's Mineral Resources Management Division comments on both exploration and development environmental documents and works with the applicant or lessee to resolve or mitigate environmental impacts.

Local governments participate in SLC review of energy projects through both the CEQA process and individual lease or permit applications. In both instances, responsible agencies and other interested parties are invited through public notices to comment during public hearings and workshops, and to provide written comments at any time during the proceedings.

If more than six wells are drilled, they are considered development wells and CEQA lead agency authority is vested with the county in which the activity is taking place.

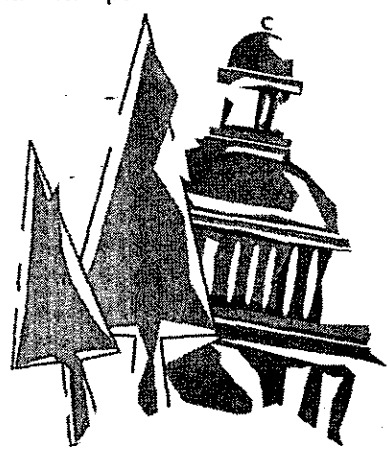
Department of Conservation, Division of Oil, Gas and Geothermal Resources

The Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) supervises the drilling, operation, maintenance and abandonment of oil, gas and geothermal wells. DOGGR's role is to prevent waste and damage to oil, gas, and geothermal deposits; prevent damage to property and natural resources; protect freshwater resources from contamination due to oil, gas, and geothermal operations; and to ameliorate land subsidence over or adjacent to oil or gas pools when this land surface is subject to inundation from the sea or geothermal operations in Imperial County.

Specific to energy projects, anyone proposing to drill, rework, or plug and abandon an oil, gas or geothermal well must obtain written approval from DOGGR. Applicants proposing gas storage and underground injection projects associated with oil, gas, and geothermal operations must also obtain well permits. The Division issues three types of permits: a permit to drill a new well; a permit to plug and abandon a well; and a permit to deepen or alter the casing in an existing well. In addition, an injection project approval letter must be submitted for all injection projects.

A geothermal field development project differs from a geothermal exploratory project; a field development project consists of all facilities necessary for the production and use of geothermal resources. DOGGR is the lead agency under CEQA for geothermal exploratory projects. These projects consist of not more than six wells drilled to evaluate geothermal resources which are at least 1/2 mile (surface distance) from an existing geothermal well deemed capable of commercial production. DOGGR is usually not the lead CEQA agency for geothermal field development projects or any oil and gas wells. Local agencies normally prepare these environmental documents.

Local governments can participate in DOGGR's review of energy projects through both the CEQA process and individual permit applications. In both instances, responsible agencies and other interested parties are invited to



comment. For exploratory projects requiring an EIR, local governments and the public may comment during public hearings.

California Air Resources Board

The California Air Resources Board (CARB) is charged with coordinating efforts to attain and maintain ambient air quality standards; conducting research into the causes of and solutions to air pollution; and addressing the environmental problems caused by motor vehicles.

Specific to energy facilities; CARB has no permitting role in the siting of energy facilities, but the agency oversees the activities of the local Air Pollution Control Districts and Air Quality Management Districts (APCD/AQMD). Under state law, local and regional air pollution control districts have the primary responsibility for controlling air pollution from all sources other than vehicles. Control of vehicular sources is the responsibility of the CARB. CARB also sets the state's policy for control of stationary sources and sets suggested control measures for the 33 local districts. Individual districts may strengthen these control measures in order to enhance their local pollution control programs.

CARB is the air pollution control agency for California for all purposes set forth in the federal Clean Air Act (CAA). It has primary responsibility for preparing the State Implementation Plan (SIP) required of all states by the CAA, and is responsible for attainment of the ambient air quality standards established by the U.S. EPA. CARB divides the state into air basins and adopts standards of air quality for each basin. The Board inventories sources of air pollution in each air basin, monitors air pollutants, and adopts test procedures to measure compliance with its nonvehicular emission standards and those of the districts. CARB also helps develop emission standards for nonvehicular sources and approves all rules before they are implemented by local air pollution districts.

Local governments can participate in CARB's review of energy projects through proceedings initiated at the local level. Regarding the air quality impacts of stationary sources such as energy facilities, CARB submits comments to the local AQMD or APCD during the Authority to Construct permit process, and to the Energy Commission during the Application for Certification process. CARB does not hold its own independent hearings or include public comment in these proceedings.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) allocates new water rights and administers water appropriation laws to ensure maximum beneficial use of the state's waters and protection of the public's interest in water development. Anyone proposing to divert water (except for small domestic use) from a surface stream or other body of water, or from a subterranean stream flowing through a known and definite channel, for direct use on non-riparian land, or who proposes to store water seasonally in a reservoir, must first obtain a Permit to Appropriate Water from the SWRCB. This permit establishes the developer's right to use water and the priority of that right in relation to other water users. Small domestic water users must obtain a Registration of Small Domestic Use Appropriation.

Specific to energy facilities, obtaining a Permit to Appropriate Water is a mandatory prerequisite to constructing any hydroelectric facility. This water rights permit is not required for the use of purchased water, for pumping water which freely percolates through a groundwater basin, for the proper exercise of a riparian right, or for the continued use of an appropriative right initiated prior to December 14, 1914. For the latter two claims of right, however, a user must file a Statement of Water Diversion and Use with the SWRCB. This is an informational record which allows the SWRCB to notify water users of applications by others that might affect their water supply.

Granting a water rights permit is subject to CEQA except in instances where FERC has a preemption regarding environmental requirements on the project. With the exception of public agencies such as water districts, the SWRCB is typically the lead agency for the preparation of the CEQA document. The SWRCB also certifies that an applicant for a federal Clean Water Act Section 401 permit complies with water quality standards.

The SWRCB also has a role in permitting storm water runoff from industrial facilities. The SWRCB grants a General Industrial Storm Water Permit for storm water runoff from energy facilities such as mining and oil and gas operations, and steam electric generating facilities. The SWRCB also issues a General Construction Activity Storm Water Permit for storm water discharges associated with any construction activity including clearing, grading, excavation, reconstruction, and dredge and fill operations that result in the disturbance of at least five acres of total land area. Finally, the SWRCB issues Certifica-

tion of Adequacy of Water Rights per Public Utilities Code Section 2821.

Local governments can participate in SWRCB review of energy projects through both the CEQA process and individual permit applications. In both instances, responsible agencies and other interested parties are invited through public notices to comment during public hearings and workshops, and to provide written comments at any time during the proceedings.

Regional Water Quality Control Board

The California Regional Water Quality Control Boards (RWQCB) form a state entity with specified regional geographic jurisdictions. The Boards are responsible for formulating regional water quality plans and adopting and enforcing waste discharge requirements. They have also been delegated limited federal authority by the U.S. Environmental Protection Agency (EPA) to certify projects under the federal Clean Water Act. The Regional Boards follow the policies adopted by the State Water Resources Control Board (SWRCB), which is responsible for licensing the appropriation of water and controlling and preventing water pollution.

Specific to energy projects, the Regional Boards are concerned with the impact of these proposed projects on the quality of surface and ground waters. Major water quality impacts normally occur during project construction, when earth may be disturbed near rivers and streams. The Boards also review ground or surface water discharges from energy projects for toxicity.

The RWQCBs' permitting authority consists of Waste Discharge Requirements (WDR) or WDR waivers, and National Pollutant Discharge Elimination System (NPDES) permits. The owner or operator of any energy facility that discharges waste which may affect groundwater quality must first obtain WDRs from the appropriate Regional Board. Activities that do not pose a threat to water quality may be granted a WDR waiver. If an energy facility or project will discharge waste (including storm water runoff for certain industrial or construction activities) into any surface waters of the state, the owner or operator must obtain a NPDES permit, rather than WDRs. NPDES permits, issued by the RWQCB in the project area, are in effect for five years.

In addition, developers whose discharges are composed entirely of industrial storm water runoff may be eligible to be regulated under a General Industrial Storm Water Permit issued by the State Water Resources Control Board (SWRCB), rather than under an individual NPDES permit issued by the appropriate RWQCB as stated above. This general industrial storm water permit regulates runoff from industrial activities including mining and oil and gas facilities, and steam electric generating facilities.

Local governments can participate in RWQCB review of energy projects through both the CEQA process and individual permit applications. In both instances, responsible agencies and other interested parties are invited through public notices to comment during public hearings and workshops, and to provide written comments at any time during the proceedings.

Department of Water Resources

The California Department of Water Resources (DWR) has general responsibility for water resource development and conservation, and flood control. DWR built and operates the State Water Resources Development System to supply good quality water for municipal, industrial, agricultural and recreational uses and for fish and wildlife protection and enhancement. State Water Project facilities generate hydroelectric power to pump SWP water. DWR is also co-owner of a coal-fired plant near Las Vegas. The power from this plant is also used for pumping water. DWR often has surplus power to sell or exchange with investor-owned utilities and municipal utilities.

DWR also supervises the construction, maintenance and operation of more than 1,200 non-federal dams. Anyone proposing to construct or enlarge a dam or reservoir must obtain DWR's written approval of the project plans and specifications prior to the start of construction. The developer must also obtain a Certificate of Approval to Store Water in order to impound water after the new or enlarged dam is built. Federal dams are exempt from the DWR approval process. Anyone proposing to alter, repair or remove a dam or reservoir must also obtain written approval from the Department.

In addition, any public or private entity requiring permanent or temporary access within, under or over State Water Project facilities' right-of-way must obtain an Encroachment Permit from the Department. This right-of-way includes operating roads, aqueducts, reservoirs, pipelines and transmission lines.

California Coastal Commission

The California Coastal Commission (CCC) is responsible for regulating development in the coastal zone, an area extending seaward three miles and inland to an average of approximately 1,000 yards from the mean high tide of the sea. In coastal estuaries, watersheds, wildlife habitats and recreational areas, the coastal zone may extend as much as five miles inland. In developed urban areas, the coastal zone may extend inland less than 1,000 yards from the mean high tide line. The coastal zone does not include areas over which the San Francisco Bay Conservation and Development Commission (BCDC) has permit authority. (See BCDC near the end of this listing.)

The CCC retains authority over tidelands, submerged lands, and certain lands held in the public trust. The Commission also retains authority to determine whether federal project activity in the coastal zone and the Outer Continental Shelf is consistent with state policies for the coast. The CCC further retains authority to determine appeals of locally issued development permits and must approve all amendments to the local coastal program. The Commission is also required to periodically review each certified local coastal program to determine whether the program is being effectively implemented in conformity with the Coastal Act.

Specific to energy facilities, anyone proposing development within the coastal zone must obtain a Coastal Development Permit from either the CCC or the city or county having authority to issue these permits. The California Coastal Act of 1976 authorized the CCC to issue these permits until such time as the cities and counties within the coastal zone obtained certification of their own local coastal development programs. Once a local program is certified by the CCC, authority to issue most Coastal Development Permits reverts to the city or county.

The CCC is concerned with the impact of proposed energy projects on all resources under its jurisdiction. The CCC is the lead agency for CEQA review if the project crosses a large amount of land in the coastal zone, and there are no other California agencies with a greater degree of involvement. If the project proponent is a public agency, it would have the lead role. If the Energy Commission has jurisdiction, it is required to coordinate its review of proposed coastal power plant projects with the CCC.

Local governments can participate in CCC review of energy projects through both the CEQA process and individual Coastal Development Permit applications. In both instances, responsible agencies and other interested parties are invited through public notices to comment during public hearings and workshops, and to provide written comments at any time during the proceedings.

Department of Fish and Game

The Department of Fish and Game (DFG) is a trustee agency responsible for managing and protecting California's fish, wildlife and native plant resources.

Specific to energy facilities, DFG is concerned with the impact of proposed projects on these resources. Any entity proposing any activity that will divert or obstruct the natural flow or change the bed, channel or bank of any river, stream or lake, or proposing to use any material from a streambed, must obtain a Lake or Streambed Alteration Agreement from the DFG. DFG is primarily concerned with a project's potential impact on endangered species, and the potential for altering the natural conditions of rivers, streams or lakes. CEQA lead agencies are required by the California Endangered Species Act to consult with DFG regarding a project's potential impact on endangered species.

DFG is authorized by the U.S. Fish and Wildlife Service (USFWS) to be responsible for the impacts of California projects on any federally-listed endangered species. When federally-listed species are affected, DFG normally notifies the USFWS and requests joint review of project and biological data. If a California project involves a federal agency permit or funding, the USFWS is normally involved. DFG acts as the liaison between the USFWS and the CEQA lead agency.

As part of the CEQA review process, DFG prepares a Biological Opinion on whether the proposed energy facility adversely affects endangered species. DFG also concurrently assesses the project's impact on streams, rivers or lakes, and the significance of this impact. Based on the results of this assessment, DFG issues or denies a Stream or Lake Alteration Agreement. More stringent DFG policies apply to projects proposed for wetland areas.

Local governments can participate in CDF review of energy projects through both the CEQA process and individual Stream or Lake Alteration Agreement proceedings. In both instances, responsible agencies and other interested parties are invited through public

notices to comment during public hearings and workshops, and to provide written comments at any time during the proceedings.

Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CDF) is responsible for regulating timber harvesting practices, conversion of timberland to other uses, and for preventing and suppressing wildfires on over 38 million acres of state and privately-owned lands.

Specific to energy facilities, CDF is interested in the impact of proposed projects on timberland productivity, on timber harvesting associated effects on the environment, and for their wildfire potential. This is normally limited to privately-owned timberlands, as the U.S. Forest Service, and other federal agencies, are responsible for timber resources on federally-owned forest lands.

The permit normally issued by the CDF is a Timber Harvest Plan and/or Timberland Conversion Permit. Public agencies such as municipal utilities are not required to obtain either of these permits when they are building or maintaining a power line right-of-way on their own or other public land. However, one or both of these permits will be required when a public agency is involved in a right-of-way which remains in private ownership.

Local governments have primary jurisdiction over the zoning of lands as Timberland Production Zones. However, the CDF becomes involved in development projects on timberland, whether or not it is zoned Timberland Production Zone, since CDF must issue a Timberland conversion Permit and approve a Timber Harvest Plan. If facility construction will result in the need to dispose of vegetative debris through burning, the project proponent must also obtain a burning permit from either a local fire protection agency or CDF.

The CDF's responsibilities also include implementation of fire prevention statutes, which come into play during the construction and maintenance of energy facilities. These include clearance requirements for welding, use of fire, and around structures, ingress and egress road widths, fire fighting water supply and hydrants, maintenance of fire protection equipment during construction, burning permit requirements and power line clearance standards.

Local governments, and other state agencies participate with CDF in the review of energy projects through the CEQA process. CDF is the lead agency for the review and issuance of Timber Harvest Plans and Timberland Conversion permits. In each of these instances, responsible agencies and other interested parties are invited through public notices to comment during public hearings and workshops, and to provide written comments during the proceedings.

Department of Parks and Recreation

The California Department of Parks and Recreation manages state park lands under its jurisdiction. Specific to energy facilities, any project proponent who needs access across state park property must obtain what the Department of Parks and Recreation refers to as a "right-of-way." A right-of-way can take the form of a permit or license, easement, joint use agreement, or lease. The Department may issue a right-of-way if it determines that it will not be detrimental to park resources and management, no other reasonable access exists, there is statutory authority to comply with the request, and there are no deed restrictions precluding its issuance. Rights-of-way exist for specific periods. A project developer can renew a permit by submitting a new application, and may amend a right-of-way application or approved contract. The state can revoke a permit pursuant to its terms.

Local governments can participate in the Department's review of energy projects through both the CEQA process and individual right-of-way applications. In both instances, responsible agencies and other interested parties are invited through public notices to comment during public hearings and workshops, and to provide written comments at any time during the proceedings.

Department of Transportation

The Department of Transportation (Caltrans) manages the state's highways and land within the Department's jurisdiction. As part of its regulatory activities, the Department must issue an Encroachment Permit for all activities proposed by any public or private entity, unless conducted under Caltrans authority, which involve an encroachment upon the State highway right-of-way.

Specific to energy projects, activities within the right-of-way that require an Encroachment Permit include constructing and maintaining road approaches or connections to or grading on any state highway, and access to pipelines and transmission lines.

Private facilities with franchise rights from local agencies which run parallel to and fall in the right-of-way of conventional highways also require Caltrans approval. Proposed encroachments that require permanent access or maintenance in highway rights-of-way are extreme cases and are considered only with certain restrictions, including the requirement that the encroachment must be a public facility or utility dedicated to public use.

Any public comment or public hearings will occur during CEQA review prior to the application for an Encroachment Permit. No public input occurs during the permit process itself.

Reclamation Board

The Reclamation Board is responsible for flood control facilities (levees, embankments and weirs) on the Sacramento and San Joaquin rivers or any of their tributaries, and planning for flood control and reclamation related to these rivers. The Board works in conjunction with the California Department of Water Resources, which has statewide responsibility for flood control.

Specific to energy facilities, any public or private entity proposing an activity adjacent to levees or streams along or near the banks or levees of the Sacramento and San Joaquin rivers, flood control bypasses, or in or adjacent to other regulated Central Valley streams, must obtain an Encroachment Permit from the Board. Applicable activities include installing, sealing or removing gas mains and power lines, removing or depositing earth, and drilling water, oil or gas wells.

Local governments can participate in Reclamation Board review of energy projects through both the CEQA process and individual encroachment permit applications. In both instances, responsible agencies and other interested parties are invited through public notices to comment during public hearings and workshops, and to provide written comments at any time during the proceedings.

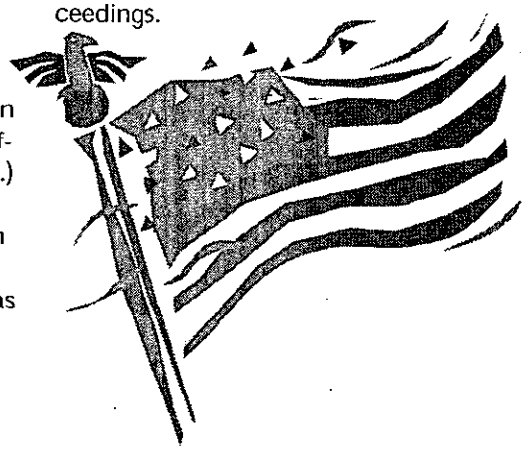
California Integrated Waste Management Board

The California Integrated Waste Management Board (CIWMB) regulates non-hazardous solid waste in California. This includes overseeing the operations of solid waste facilities such as landfills, transfer-processing stations, compost facilities, and waste-to-energy plants, and certain recycling activities.

Specific to energy facilities, anyone proposing to operate a solid waste energy facility must first obtain a solid waste facilities permit from the local enforcement agency (LEA) with jurisdiction over the proposed site. The CIWMB must concur in the issuance of a proposed permit before it may be issued by the LEA. LEAs may exempt solid waste facilities from the permit requirement provided the LEA can make findings that the exemption is not against the public interest; the quantity of solid waste is insignificant; there is no significant threat to health, safety, or the environment; and the facility meets certain classifications. (See Title 14, California Code of Regulations, 18215.) Historically, the CIWMB has not required energy facilities to obtain a permit if the facility burns only source separated materials, such as wood or tires. The three energy facilities which have been issued solid waste facilities permits burn mixed municipal solid waste.

The primary considerations when issuing permits are preventing environmental damage, providing long-term protection of the environment, and ensuring that facilities will operate in compliance with state standards and financial assurance requirements. The CIWMB evaluates each project's effect on public health and the environment. The Board considers the effect of the project's proximity to sensitive areas, such as residential or commercial developments, although siting decisions are made at the local level. The Board may reject a project if it poses a hazard to nearby residential areas. The Board may also reject a project that will contaminate surface water or groundwater, although surface and groundwater issues are primarily in the jurisdiction of the Water Board. The CIWMB will reject proposals for waste facilities that do not have local land use approval.

Local governments can participate in CIWMB review of energy projects through both the CEQA process and individual solid waste facility permit applications. In both instances, responsible agencies and other interested parties are invited through public notices to comment during public hearings and workshops, and to provide written comments at any time during the proceedings.



Department of Toxic Substances Control

The Department of Toxic Substances Control (DTSC) works to protect and enhance public health and the environment by regulating the handling, storage, transportation, and disposal of hazardous waste and promoting the reduction of this waste. Anyone who stores, treats or disposes of hazardous waste must obtain a Hazardous Waste Facilities Permit from the Department.

Specific to energy projects, types of facilities that require a Hazardous Waste Facilities Permit include storage (either onsite or offsite), treatment, disposal, and resource recovery. Permitting "tiers" match the requirements placed on hazardous waste facilities with the hazard posed by that facility's operation. Several different levels or "tiers" of permits may be required, each with different regulatory burdens, depending on the severity of the activity involved. The DTSC also has authority to issue permits deemed equivalent to the federal permit required by the Resource Conservation and Recovery Act, so a separate federal permit from the U.S. Environmental Protection Agency is not necessary.

Local governments can participate in DTSC review of energy projects through both the CEQA process and individual hazardous waste permit applications. In both instances, responsible agencies and other interested parties are invited through public notices to comment during public hearings and workshops, and to provide written comments at any time during the proceedings.

San Francisco Bay Conservation and Development Commission

The San Francisco Bay Conservation and Development Commission (BCDC) is also a state agency with a specified regional geographic jurisdiction. BCDC is responsible for planning and regulating development in the San Francisco Bay itself and along the immediate shore line. BCDC's jurisdiction also includes San Pablo and Suisun Bays, adjacent streams, and the Suisun Marsh. Anyone proposing to fill, extract materials, or change the use of water, land or structures in or around these areas must obtain a Development Permit from BCDC. BCDC's permit jurisdiction extends 100 feet inland from either the mean high tide line or five feet above mean sea level in marshes around the San Francisco, San Pablo and Suisun Bays.

Specific to energy facilities, BCDC is concerned with the impacts of proposed projects on the Bay's visual and other sensitive resources such as coastal wetlands and plant and wildlife species. BCDC is the CEQA lead agency if the project crosses a large amount of land in the Bay zone, and there are no other California agencies with a greater degree of involvement. If the Energy Commission has jurisdiction, it is required to coordinate its review of proposed energy facilities affecting the Bay with BCDC.

Local governments can participate in BCDC's review of energy projects through the EIR process under CEQA's mandate, or through Energy Commission proceedings. This includes participating in public workshops and hearings, and providing written comments on development proposals.

Tahoe Regional Planning Agency.

The Tahoe Regional Planning Agency (TRPA), a bi-state agency with a specified regional geographic jurisdiction, was established by interstate compact between California and Nevada. Anyone proposing any development in the Lake Tahoe Basin must obtain approval from TRPA, which has adopted a regional development plan for the Basin. TRPA implements this plan by applying ordinances to all development projects which could affect the area.

For energy projects, TRPA has established environmental carrying capacity thresholds for air quality, water quality, scenic quality, soils, vegetation, wildlife, fisheries, noise and recreation. TRPA reviews these projects to determine whether these thresholds would be exceeded, and must deny those projects which exceed the thresholds. The Tahoe Compact requires the preparation of a federal Environmental Impact Statement (EIS) for every project which may have an effect on the environment, as required by the National Environmental Policy Act (NEPA). The EIS is prepared by TRPA and may be used by other California agencies in lieu of an EIR.

Local governments can participate in TRPA's review of energy projects through the EIS process under NEPA's mandate. This includes participating in public workshops and hearings, and providing written comments on development proposals.

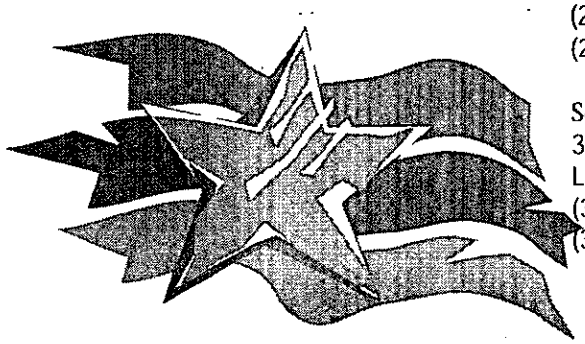
NOTES NOTES NOTES

APPENDIX D: STATE AND FEDERAL OFFICES INVOLVED IN ENERGY FACILITY PERMITTING

The addresses and telephone numbers of the following agencies involved in energy facility permitting are listed in this appendix in this order:

STATE AND REGIONAL AGENCIES

Department of Fish & Game
Department of Forestry and Fire Protection
Department of Housing and Community Development
Department of Parks and Recreation
Department of Water Resources
Department of Toxic Substances Control
Department of Transportation
CAL/OSHA Consultation Offices
Coastal Commission
Energy Commission
Integrated Waste Management Board
Public Utilities Commission
Reclamation Board
San Francisco Bay Conservation and Development Commission
State Lands Commission
State Water Resources Control Board
Tahoe Regional Planning Agency



FEDERAL AGENCIES

U.S. Army Corps of Engineers
U.S. Department of Agriculture
U.S. Department of the Interior, Bureau of Land Management

DEPARTMENT OF FISH AND GAME

State Headquarters
1418 Ninth Street, 12th Floor
Sacramento, CA 95814
(916) 653-7664
(916) 653-1856 (fax)

Northeast District
601 Locust
Redding, CA 98001
(916) 225-2300
(916) 225-2381 (fax)

Central Valley District
1701 Nimbus Road
Rancho Cordova, CA 95870
(916) 355-0978
(916) 355-7102 (fax)

Napa Valley District
7829 Silverado Trail
Napa, CA 94588
(707) 944-5500
(707) 944-5563 (fax)

Bay Area District
1234 East Shaw Avenue
Fresno, CA 93710
(209) 222-3761
(209) 445-6426 (fax)

Southern District
330 Golden Shore, Suite 50
Long Beach, CA 90602
(310) 590-5132
(310) 570-5193 (fax)

DEPARTMENT OF FORESTRY AND FIRE PROTECTION

(Timber Harvesting Plan)
The Department of Forestry and Fire Protection (Headquarters)
1416 Ninth Street
Sacramento, CA 95814
(916) 653-7211

(Timberland Conversion Permit)
North Coast Region
135 Ridgeway Avenue
Santa Rosa, CA 95402
(707) 576-2275

Sierra Cascade Region
6105 Airport Road
Redding, CA 96002
(916) 224-2445

South Sierra Region
1234 East Shaw Avenue
Fresno, CA 93710-7899
(209) 222-3714

Southern California Region
2524 Mulberry Street
Riverside, CA 92501
(714) 782-4140

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

(Permit to Construct)

Division of Codes and Standards
Northern Area Office
8911 Folsom Boulevard
Sacramento, CA 95826
(916) 255-2501

Division of Codes and Standards
Southern Area Office
2038 Iowa Avenue, Building B, Suite 102
Riverside, CA 92507
(909) 782-4420

DEPARTMENT OF PARKS AND RECREATION
(Right-of-Way)

Office of Park Services
1416 9th Street, Room 1431
Sacramento, CA 94296-0001
(916) 653-4272

DEPARTMENT OF WATER RESOURCES

(Approval of Plans and Specifications to Construct, Enlarge, Repair, Alter, or Remove a Dam or Reservoir; and Certificate of Approval to Store Water)

Division of Safety of Dams
2200 "X" Street, Suite 200 (95818)
P.O. Box 942836
Sacramento, CA 94299-9836
(916) 445-8768

(Encroachment Permit)

Division of Land and
Right-of-Way
1416 Ninth Street (95814)
P.O. Box 942836
Sacramento, CA 94299-9836
(916) 653-8490

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Headquarters Office
400 P. Street
P.O. Box 806
Sacramento, CA 95812-1826
(916) 324-1826

Region 1- Sacramento Office
10151 Croydon Way, Suite 3
Sacramento, CA 95827
(916) 255-3545

Region 1 - Clovis Office
(Surveillance & Enforcement and Site Mitigation Branch Office)
1515 Toll House Road
Clovis, CA 93612
(209) 297-3901

Region 2 - Berkeley
700 Heinz Avenue, Bldg. F,
Suite 200. Berkeley, CA 94710
(510) 540-2122

Region 3 - Glendale
1011 Grandview Avenue
Glendale, CA 91201
(818) 551-2800

Region 4 - Long Beach
245 West Broadway, Suite 350
Long Beach, CA 90802
(310) 590-4868

DEPARTMENT OF TRANSPORTATION
(Encroachment Permit)

1656 Union Street
Eureka, CA 95501
(707) 445-6385

1000 Center Street
Redding, CA 96001
(916) 225-3400

801 B Street
Marysville, CA 95901
(916) 741-5374

111 Grand Avenue
P.O. Box 23660
Oakland, CA 94623
(510) 286-4404

50 Higuera Street
San Luis Obispo, CA 93401
(805) 549-3152

1333 West Olive Avenue
Fresno, CA 93728
(209) 445-6578

120 South Spring Street
Los Angeles, CA 90012
(213) 897-3631

247 W. Third Street
San Bernardino, CA 92492
(714) 383-4017

500 South Main
Bishop, CA 93514
(619) 872-0671

1976 East Charter Way
Stockton, CA 95206
(209) 948-7891

4080 Taylor Street
San Diego, CA 92110
(619) 688-6843

2501 Pullman Street
Santa Ana, CA 92705
(714) 724-2260

CAL/OSHA CONSULTATION OFFICES

Headquarters
455 Golden Gate Avenue,
Room 5246
San Francisco, CA 94102
(415) 703-4050

Santa Fe Springs
10350 Heritage Park Dr., Suite 201
Santa Fe Springs, CA 94403
(310) 944-9366

Fresno
1901 N. Gateway, Suite 102
Fresno, CA 93727
(209) 454-1295

Sacramento
2424 Arden Way, Suite 410
Sacramento, CA 95825
(916) 263-2855

San Diego
7827 Convoy Court, Suite 406
San Diego, CA 92111
(619) 279-3771

San Mateo
3 Waters Park Drive, Room 230
San Mateo, CA 94403
(415) 573-3864

Anaheim
2100 East Katella Avenue,
Suite 200
Anaheim, CA 92806
(714) 939-7602

San Fernando Valley
3550 West 6th Street, Room 415
Los Angeles, CA 90020
(213) 736-2187

COASTAL COMMISSION
(Coastal Development Permit)

North Coast District
North Coast Area Office
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219
(415) 904-5260

Central Coast District
Central Coast Area Office
725 Front Street, Suite 300
Santa Cruz, CA 95060-4508
(408) 427-4863

South Central Coast Area Office
89 S. California Street, Suite 200
Ventura, CA 93001-2801
(805) 641-0142

South Coast District
South Coast Area Office
245 West Broadway, Suite 380
Long Beach, CA 90802-4416
(213) 590-5071

San Diego Coast Area Office
3111 Camino Del Rio North,
Suite 200
San Diego, CA 92108-3520
(619) 521-8036

Headquarters Office
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219
(415) 904-5200

ENERGY COMMISSION
1516 9th Street
Siting Office
(916) 654-3928
Sacramento, CA 95814

INTEGRATED WASTE MANAGEMENT BOARD
(Solid Waste Facilities Permit)

8800 Cal Center Drive
Sacramento, CA 95826
(916) 255-2200

PUBLIC UTILITIES COMMISSION
(Certificate of Public Convenience and Necessity)

Public Utilities Commission
State Office Building
505 Van Ness Avenue
San Francisco, CA 94102
(415) 703-1282

RECLAMATION BOARD
(Application for a Permit/
Encroachment Permit)

Floodway Protection Section
1416 Ninth Street, Room 455-8
Sacramento, CA 95814
(916) 653-5726

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION (BCDC)
(Development Permit)

30 Van Ness Avenue, Room 2011
San Francisco, CA 94102
(415) 557-3686

STATE LANDS COMMISSION

Executive Office
100 Howe Avenue, Ste. 100-South
Sacramento, CA 95825-8202
(916) 574-1800

Division of Land Management
Land Use Lease
(916) 574-1940
Dredging Lease
(916) 574-1890
Marine Salvage Permit
(916) 574-1850

Division of Environmental
Planning and Management
(916) 574-1890

Mineral Resources Management
200 Oceangate, 12th Floor
Long Beach, CA 90802-4331

Geothermal Exploration or
Prospecting Permit
(310) 590-5201

Mineral Prospecting Permit
(310) 590-5201

Marine Facilities Division
330 Golden Shore, Suite 210
Long Beach, CA 90802-4246
(310) 499-6312

STATE WATER RESOURCES CONTROL BOARD

Headquarters
901 P Street
P.O. Box 100
Sacramento, CA 95812-0100
(916) 657-2390

Division of Clean Water Programs
Underground Storage Tank
Program
P.O. Box 944212
Sacramento, CA 94244-2120
(916) 227-4303

North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403
(707) 576-2220
(707) 523-0135 (fax)

San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612
(510) 286-1255
(510) 286-1830 (fax)

Central Coast Region
61 Higuera Street, Suite 200
San Luis Obispo, CA 93401-2156
(805) 549-3147
(805) 643-0397 (fax)

Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-2156
(213) 266-7500
(213) 266-7600 (fax)

Central Valley Region
3443 Routier Road
Sacramento, CA 95827-3098
(916) 255-3000
(916) 255-3015 (fax)

Fresno Branch Office
3514 East Ashlan Avenue
Fresno, CA 93726
(209) 445-5116
(209) 445-5910 (fax)

Redding Branch Office
415 Knollcrest Drive
Redding, CA 96002
(916) 224-4845
(916) 224-4857 (fax)

Lahontan Region
2092 Lake Tahoe Blvd, Suite 2
South Lake Tahoe, CA 96150
(916) 544-5400
(916) 544-2271 (fax)

Victorville Branch Office
15428 Civic Drive, Suite 100
Victorville, CA 92392-2383
(619) 241-6583
(619) 241-7308 (fax)

Colorado River Basin Region
73-720 Fred Waring Drive,
Suite 100
Palm Desert, CA 92260
(619) 346-7491
(619) 341-6820 (fax)

Santa Ana Region
2010 Iowa Avenue, Suite 100
Riverside, CA 92507-2409
(909) 782-4130
(909) 781-6288 (fax)

San Diego Region
9771 Clairemont Mesa Blvd,
Suite B
San Diego, CA 92124
(619) 467-2952
(619) 571-6972 (fax)

TAHOE REGIONAL PLANNING AGENCY
(Project Permit)

195 U.S. Highway 50
P.O. Box 1038
Zephyr Cove, Nevada 89448-1038
(702) 588-4547

U.S. ARMY CORPS OF ENGINEERS

San Francisco District
Corps of Engineers
211 Main Street
San Francisco, CA 94105-1905
(415) 744-3036

Sacramento District
Corps of Engineers
1325 "J" Street
Sacramento, CA 95814
(916) 557-5250

Los Angeles District
Corps of Engineers
300 North Los Angeles Street
(90012)
P.O. Box 2711
Los Angeles, CA 90053-2325
(213) 894-5606

U.S. DEPARTMENT OF AGRICULTURE
(USDA Forest Service)

Angeles National Forest
Supervisor's Office
701 North Santa Anita Avenue
Arcadia, CA 91006
(818) 574-1613

Cleveland National Forest
Supervisor's Office
10845 Rancho Bernardo Road
San Diego, CA 92127-2107
(619) 673-6180

El Dorado National Forest
Supervisor's Office
100 Forni Road
Placerville, CA 95667
(916) 622-5061

Klamath National Forest
Supervisor's Office
1312 Fairlane Road
Yreka, CA 96097
(916) 842-6131

Lassen National Forest
Supervisor's Office
55 South Sacramento Street
Susanville, CA 96130
(916) 257-2151

Mendocino National Forest
Supervisor's Office
420 East Laurel Street
Willows, CA 95988
(916) 934-3316

Plumas National Forest
Supervisor's Office
159 Lawrence Street, Box 11500
Quincy, CA 95971
(916) 283-2050

Sequoia National Forest
Supervisor's Office
900 West Grand Avenue
Porterville, CA 93257-2035
(209) 784-1500

Sierra National Forest
Supervisor's Office
1600 Tollhouse Road
Clovis, CA 93612
(209) 487-5155

Stanislaus National Forest
Supervisor's Office
19777 Greenley Road
Sonora, CA 95370
(209) 532-3671

Inyo National Forest
Supervisor's Office
873 North Main Street
Bishop, CA 93514
(619) 873-2400

Lake Tahoe Basin
Management Unit
P.O. Box 731002
870 Emerald Bay Road, Suite 1
South Lake Tahoe, CA 96150
(916) 573-2600

Los Padres National Forest
Supervisor's Office
6144 Calle Real
Goleta, CA 93117
(805) 683-6711

Modoc National Forest
Supervisor's Office
441 North Main Street
Alturas, CA 96101
(916) 233-5811

San Bernardino National Forest
Supervisor's Office
1824 South Commercenter Circle
San Bernardino, CA 92408-3430
(714) 383-5588

Shasta-Trinity National Forest
Supervisor's Office
2400 Washington Avenue
Redding, CA 96001
(916) 246-5222

Six Rivers National Forest
Supervisor's Office
1330 Bayshore Way
Eureka, CA 95501
(707) 442-1721

Tahoe National Forest
Supervisor's Office
631 Coyote Street
P.O. Box 6003
Nevada City, CA 95959-6003
(916) 265-4531

U.S. DEPARTMENT OF INTERIOR - BUREAU OF LAND MANAGEMENT

(Developer-Applicant Inquiry)

California State Office
2800 Cottage Way, Room E-2807
Sacramento, CA 95825
(916) 978-4754

Bakersfield District
3801 Pegasus Drive
Bakersfield, CA 93308
(805) 391-6000
(805) 391-6072 (fax)

California Desert District
6221 Box Spring Boulevard
Riverside, CA 92507
(909) 697-5200
(909) 697-5299 (fax)

Susanville District
705 Hall Street
Susanville, CA 96130
(916) 257-5381
(916) 257-4831 (fax)

Ukiah District
2550 North State Street
Ukiah, CA 95482
(707) 468-4000
(707) 468-4027 (fax)

NOTES NOTES NOTES

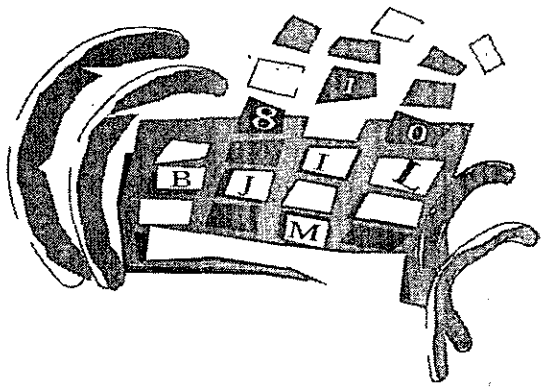
APPENDIX E: SOURCES OF INFORMATION

The following sources of information are provided to assist local governments in energy facility planning. The sources are identified by organizations, university resource centers, publication and electronic and computer resource services. Additional information sources are located in individual chapters.

ORGANIZATIONS

Alliance to Save Energy
1725 K Street SW, Suite 509, Washington, DC 20006-1401. (202) 857-0666; Fax: (202) 331-9588. A coalition of business, government, environmental and consumer leaders who seek to increase the efficiency of energy use. Conducts research, pilot projects, and education programs. Publishes *Alliance Update* (quarterly newsletter) and reports, manuals, software, and other materials on energy topics.

American Association for Fuel Cells
50 San Miguel Avenue, Daly City, CA 94015. (415) 992-3963; Fax: (415) 755-0709. Promotes public understanding of fuel cells and their environmental benefit. Provides information to the public and conducts educational programs. Publishes a quarterly newsletter, *American Association for Fuel Cells Newsletter.*



American Council for an Energy Efficient Economy (ACEEE)
1001 Connecticut Avenue NW, Suite 801, Washington, DC 20036. (202) 429-8873; Fax: (202) 429-2248. Independent organization that gathers, evaluates and disseminates information to stimulate greater energy efficiency. Provides independent assessments of energy technologies and policies. Provides technical assistance and referrals to consumers. Advises policy-makers in both the private and public sector. Publishes *Energy Conservation and Energy Policy Series* and various research reports.

American Hydrogen Association
215 S. Clark Drive, Suite 103, Tempe, AZ 85281. (609) 921-0433. Individuals interested in renewable natural resources. Advocates transition from fossil and nuclear energy sources to solar-hydrogen technologies in order to help resolve environmental problems such as global warming, acid rain, ozone depletion and urban air pollution. Promotes the production of hydrogen from sewage and garbage and the generation of electricity from solar power. Publications include *Hydrogen Today* (bi-monthly newsletter) and numerous books on solar-hydrogen technologies.

American Wind Energy Association (AWEA)
122 C Street NW, Fourth Floor, Washington, DC 20002-2109. (202) 383-2500; Fax: (202) 383-2505. A professional membership association whose purpose is to encourage a high standard of business practices within the wind energy industry. Assists members in designing, building, installing, operating, and maintaining wind energy conversion systems and system components in a manner compatible with public health, safety, and environmental values. AWEA has a large publications catalog. Magazines and newsletters include *Wind Energy Weekly and Windletter.*

Biomass Energy Research Association
1825 K Street NW, Suite 503, Washington, DC 20006. (202) 785-2856. Promotes the development and commercialization of biomass energy systems. Supports technology transfer research of nonfossil fuels such as municipal solid waste, refuse-derived fuels, wood waste, and sludge.

California Municipal Utilities Association
1225 8th Street, Sacramento, CA 95814. (916) 441-1733. Trade association that represents publicly owned utilities before the California Legislature and various state Boards and Commissions.

Cogeneration Institute of the Association of Energy Engineers
4025 Pleasantdale Road, Suite 420, Atlanta, GA 30340.
(404) 447-5083. Engineers, architects, manufacturers, and industrialists with an interest for energy management and cogeneration. Publishes *The Cogeneration Journal.*

Directory of Environmental Organizations, 1993
Educational Communications, P.O. Box 351419, Los Angeles, CA 90035-9119. (310) 559-9160. This directory lists the names, addresses, and telephone numbers of most national and local environmental organizations. Specific language concerning each group's functions and interests is not provided.

Edison Electric Institute
701 Pennsylvania Avenue NW, Washington, DC 20004.
(202) 508-5660; Fax: (202) 508-5380. Trade association for investor-owned utilities. Many members have hydropower generating capacity. Every area of electric utility operation is covered. Provides consulting and reference services on any phase of electric utility business. Publishes *Electric Perspectives* (bi-monthly) and *Weekly Electric Power Output.*

Electric Power Research Institute (EPRI)
3412 Hillview, P.O. Box 10412, Palo Alto, CA 94303.
(415) 855-2000; Fax: (415) 855-2954. Plans and manages research and development on behalf of the U.S. electric utility industry and the public to advance capabilities in electric power generation, delivery and use. Publishes *EPRI Journal* (eight times per year).

Fuel Cell Association
P.O. Box 66392, Washington, DC 20035. (301) 681-3532; Fax: (301) 681-4896. Promotes the development and use of fuel cells in all markets including utility, industrial, commercial, residential and aerospace/defense. Publishes *Fuel Cell News Quarterly.*

Gale Environmental Sourcebook
Gale Research Inc., 835 Penobscot Building, Detroit, MI 48226-4094. (800) 877-4253. A vast information resource that lists and describes government programs, research centers, organizations, books, directories, and much more relat-ing to environmental protection.

Geothermal Resource Council
2001 Second Street, Suite 5, POB 1350, Davis, CA 95617.
(916) 758-2360; Fax: (916) 758-2839. A leading proponent of geothermal energy and a major center for information in the geothermal area. Conducts periodic workshops, seminars, and symposia. Publishes *Transactions* (annually), *Geothermal Council Bulletin* (monthly) and various special reports.

Independent Energy Producers Association
1001 G Street, Suite 103, Sacramento, CA 95814. (916) 448-9499; Fax: (916) 448-0182. Representative before the Legislature and State agencies (i.e. CEC and PUC) on behalf of membership which includes independent power products and qualifying facilities. Conducts annual member meeting. Publishes *Independent Energy Perspectives,* a bimonthly newsletter.

Institute of Gas Technology
3424 South State Street, Chicago, IL 60616.3896. (312) 567-5282; Fax: (312) 567-3857. Conducts research in solid waste management, including waste to energy and landfill stabilization, and distributes information to the public.

Lawrence Berkeley Laboratory
(LBL) MS-50A-4133, Berkeley, CA 94720. (415) 486-5111; Fax: (415) 486-6720. Operated by University of California at Berkeley under contract with U.S. Department of Energy. Research in Energy and Science Program includes energy and environmental sciences. Publications include *LBL Reports* (periodic) and *LBL Research Review* (quarterly). Additional contact: Public Information Department: (415) 486-5771.

Municipal Waste Management Association (MWMA)
C/O U.S. Conference of Mayors, 1620 I Street, NW, Washington, DC 20006. (202) 293-7330. Promotes resource recovery facilities and heating and cooling systems.

National Hydropower Association
122 C. Street NW, Fourth Floor, Washington, DC 20001.
(202) 383-2530. Promotes the development of hydroelectric energy.

National Renewable Energy Lab
(NREL) 1617 Cole Boulevard, Golden, CO 80401-3313.
(303) 231-1000. Conducts research on the renewable technologies, including photovoltaics, alternative fuels, wind energy, ocean energy, solar thermal energy, and energy efficiency technologies. Research results published in technical journals that are available from the National Technical Information Service

(NTIS). Also publishes *In Review*, a quarterly news magazine. Maintains Technical Inquiry Service which supplies NREL and subcontractors technical information to researchers and scientists. For information on Technical Inquiry Service contact Steve Rubin at (303) 275-4009 or via Internet/ E-mail at RUBIN@ TCPLINK.NREL.GOV.

National Wood Energy Association (NWEA)
777 North Capitol Street NE, Suite 805, Washington, DC 20002-4226. (202) 408-0664; Fax: (202) 408-8536. Lobbies Congress in support of biomass energy and works with federal agencies to address industry need and concerns. Publishes *Biologue*, a quarterly magazine.

Photovoltaics for Utility Scale Applications (PVUSA)
PVUSA Project Office, 3400 Crow Canyon Road, Sunset Building, San Ramon, CA 94583. (510) 866-5569. Provides utilities with hands-on experience with PV systems and allows PV manufacturers to gain experience in meeting the needs of utilities.

Renewable Fuels Association
1 Massachusetts Avenue NW, Suite 820, Washington, DC 20001. (202) 289-3835; Fax: (202) 289-3835. Represents the renewable fuels industry before the government and throughout the United States. Publishes a monthly newsletter.

Society for the Application of Free Energy
POB 8276, Silver Springs, MD 20910. (301) 587-8686. Promotes solar energy and other alternative energy programs. Research and development activities include photovoltaic cells, coal gasification and desulfurization systems.

Solar Energy Industries Association (SEIA)
122 C Street NW, Fourth Floor, Washington, DC 20002-2109. (202) 383-2600; Fax: (202) 383-2670. Ongoing reports on the state of the solar industry, including economic status and policy recommendations for accelerating most-effective technologies facing institutional barriers and market imperfections. Publishes *Solar Industry Journal*, a quarterly magazine.

Utility Wind Interest Group (UWIG) Western Area Power Administration Representative, Steve Sargent, A0400, 1627 Cole Boulevard, Golden CO 80401-3393. (303) 231-1694.

UNIVERSITY RESEARCH CENTERS

Arizona State University
Center for Energy System Research
College of Engineering and Applied Sciences, Tempe, AZ 85287-5806. (602) 965-2896; Fax: (602) 965-0745. Dr. Byard D. Wood, Director. Energy management and biomass conversion to fuels, PV and PV system design. Provides energy analysis and diagnostic services. Research results published in journals, technical reports, theses and dissertations.

San Diego State University
Center for Energy Studies, Department of Physics
San Diego, CA 92182. (619) 594-6240; Fax: (619) 594-5485. Dr. Alan Sweedler, Director. Energy, environmental and economic modeling for local regions. Economic analysis for energy systems. Air quality impacts on energy systems. Demand side management. Energy and environment in the US-Mexico border region. Research results published in technical reports and open literature.

University of California, Berkeley
Energy Research Group
Bldg T-9 RM 216, Berkeley, CA 94720. (510) 642- 9588; Fax: (415) 643-5180. Professor Richard J. Gilbert, Director. Two research programs:

1) The California Energy Studies Program which support faculty research on critical energy problems and issues facing California.

2) The Energy Science and Technology Research Program emphasizes basic science and engineering research related to development of energy technologies including conservation and renewable conventional energy sources. Publishes *Technical Report Series* (list available on request).

PUBLICATIONS

Biofuels Update
National Renewable Energy Laboratory, 1617 Cole Boulevard, Golden, CO 80401-3393. (303) 275-4347. Free quarterly newsletter.

Biologue
National Wood Energy Foundation, 777 Capitol Street NE, Washington, DC 20002. (202) 408-0664. Reports quarterly on biomass energy projects for the U.S. Department of Energy. Also chronicles outstanding biomass energy projects overseas.

Biomass Energy Directory, 1993
Independent Energy Magazine, 620 Central Avenue N., Milaca, MN 56353-1788. (612) 983-6892. Complete directory of the biomass market, company descriptions, and trade groups.

Center for Environmental Research Information
26 West Martin Luther King Drive, Cincinnati, OH 45268. (513) 569-7391. This center operates the U.S. Environmental Protection Agency's (EPA's) Office of Research and Development's electronic bulletin board system. A researcher with a computer modem can access 20,000 research reports by dialing (513) 569-7620. Reports, dated from 1977, are listed by title, author, abstract, and test fields. Hard copies of reports are available through EPA or National Technical Information Service (NTIS).

COGEN
Formerly *Cogeneration & Resource Recovery Magazine,* Cogeneration Publications, 747 Leigh Mill Road, Great Falls, VA 22066. (703) 759-5060. Bimonthly magazine of economic and technical information on cogeneration.

Energy Information Abstracts
Bowker AI&I Publishing, a division of Reed Publishing (USA) Inc., 121 Chanlon Road, New Providence, NJ 07074. (800) 521 -8110. Focuses on research and development, resources, consumption, conservation, economics, and industrial applications of energy sources and technologies. Information is abstracted and indexed from scientific, technical, and business journals; conference and symposium proceedings; and academic, government, and corporate reports. Includes a listing of conferences and events.

Energy Review
800 Garden Street, Suite D, Santa Barbara, CA 93101. (805) 965-5010; Fax: (805) 965-6071. Digest of current books, articles, and reports on all facets of energy, including alternative energy, fossil fuel and nuclear energy sources, as well as waste.

Fuel Cell News
P.O. Box 66392, Washington, DC 20035. (301) 681-3532: Fax: (301) 681-4896. Quarterly news letter published by the Fuel Cell Association.

Gas Turbine World
Pequot Publishing Inc., Box 447, Southport, CT 06490-0447. (203) 259-1812. A bi-monthly publication covering gas turbines for industrial and electric utility applications, including recent technological advancements and orders for new projects.

Geothermal Resources Council Bulletin
Geothermal Resources Council, 2001 Second Street, Suite 5, Davis, CA 95617. (916) 758-2360; Fax: (916) 758-2839. A monthly publication featuring on-the-spot reports from world correspondents.

Hydro Review
HCI Publications, 410 Archibald Street, Kansas City, MO 64111-3046. (816) 931-1311; Fax: (816) 931-2015. Published eight times each year. Contains features and technical articles of interest to the North American hydroelectric industry.

Independent Energy Magazine
620 Central Avenue N., Milaca, MN 56353-1788. (612) 983-6892. Provides a forum for relatively small, independent energy producers.

Journal of Wind Energy Technology, 1988
Windbooks Inc., P.O. Box 4008., St. Johnsbury, VT 05819-4008. (802) 748-5148. Examines the aerodynamic, meteorological, structural, electrical, and mechanical engineering of energy systems and their applications worldwide.

National Energy Information Center (NEIC)
U.S. Department of Energy's Energy Information Administration (EIA), EI-231, Forrestal Building, Washington, DC 20585. (202) 586-8800. NEIC provides statistical and analytical data about energy resource reserves, energy production, demand, consumption, distribution, and technology. In print, with Energy Abstracts, and on-line through EIA's electronic bulletin board system. (202) 586-2557.

National Technical Information Service (NTIS)
5285 Port Royal Road, Springfield, VA 22161. (703) 487-4650. Operated by the U.S. Department of Commerce, NTIS is the central source for scientific and technical reports on research sponsored with federal funds. NTIS also catalogs and distributes software developed by the federal government. In total, NTIS makes more than 2 million documents available to the public and provides conference proceedings from a variety of technical conferences. NTIS indexes are available on-line, on disk, and in print. NTIS publications are compiled into a DIALOG computer data base called NTIS.

Photovoltaics for Municipal Planners, 1993
National Renewable Energy Laboratory (NREL), 1617 Cole Boulevard, Golden, CO 80401-3393. (303) 275-4363.

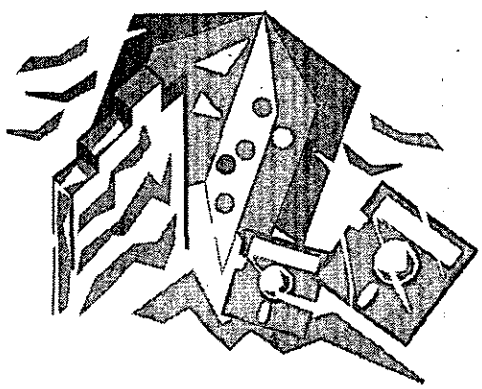
Power Magazine
McGraw-Hill Inc., 12201 Avenue of the Americas, New York, NY 10020. (212) 512-2000. To subscribe write P.O. Box 521, Highstown, NJ 08520. Article topics include waste-to-energy, cogeneration, boiler operation, and utility operations from an engineering perspective.

PV News
Photovoltaic Energy Systems Inc., P.O. Box 290, Casanova, VA 22017. (703) 788-9626. International newsletter on photovoltaic energy, covers all industry news, markets, products, economics, government programs, key people and annual market survey.

Solar Energy
Pergamon Press, 660 White Plains Road, Tarrytown, NY 10591-5153. (914) 524-9200. International Solar Energy Society journal for scientists, engineers, and technologists in solar energy and its applications. Published monthly.

Solar Industry Journal
Solar Energy Industries Association, 122 C Street NW, Fourth Street, Washington, DC 20002-2109. (202) 383-2600; Fax: (202) 383-2670. Quarterly magazine. Once a year, the magazine publishes a useful list of solar industry manufacturers.

Solar Today
American Solar Energy Society, 2400 Central Avenue, Unit G—1, Boulder, CO 80301. (303) 443-3130. A bimonthly publication that provides information on solar energy for engineers, scientists, architects, educators, practitioners, research, and users. Includes actual case histories, and reviews of different technologies.



The Energy Daily
Kings Communication Group, 627 National Press Building, Washington, DC 20045. (202) 662-9724; Fax: (202) 662-9719. A unique publication covering the entire spectrum of energy sources, oil and gas, nuclear, coal, electricity and synthetic fuels. Includes coverage of energy finance.

UDI Who's Who in Cogeneration and Independent Power, 1993
Utility Data Institute, 1700 K Street NW, Washington, DC 20006. (202) 942-8788.

Western Energy Update
Western Interstate Energy Road 600 17th Street, #17045, Denver, CO 80202-5401. (303) 573-8910. Newsletter published approximately 12 times a year focusing on energy policy developments affecting the energy interests of 12 Western States and three western Canadian provinces. The primary audience is state and provincial energy policy makers.

Wind Energy News, 1987
Windbooks Inc., P.O. Box 4008., St. Johnsbury, VT 05819-4008. (802) 748-5148. International newsletter of wind power. Focuses on business, marketplace, and international policies of windmill industry.

Windletter
American Wind Energy Association (AWEA), 122 C Street NW, Fourth Floor, Washington, DC 20002-2109. (202) 383-2500; Fax: (202) 383-2505. To further the art and science of utilizing wind energy.

Wind Power Monthly
Vrinners Hoved, 8420 Knebel, Denmark. +45-86365465; Fax: +45-86365626; Telex: 64728 newind dk. US Office: P.O. Box 496007, Suite 217, Redding, CA 96099-6007. Fax: (415) 474-1985. News magazine published in English that covers news from around the world in the wind industry. *Windstats Newsletter* also available.

ELECTRONIC RESOURCES

Alternative Energy Network Online Today
Environmental Information Networks, 119 South Fairfax Street, Alexandria, VA 22314. (703) 683-0774; Fax: (703) 683-3893. EIN provides a variety of electronic services via Fax and Internet including Alternative Energy Network Online Today, Alternative Fuel Vehicle Online Today and Electric Vehicle Online Today. Additional services include Daily Fax Service and a monthly publication entitled *Month in Review* which is a bound copy of daily news releases.

Electric Power Database
DIALOG Information Services, 3460 Hillview Avenue, Palo Alto, CA 94304. (800) 334-2564. Provides references to research and development projects of interest to the electric power industry.

Energy and Regulatory Matters Information Service (ERMIS)
Michigan Public Service Commission, 6545 Mercantile Way, Lancaster, MI 48909. (517) 334-6240. Provides access to electronic mail, files and data bases. Covers all types of energy and regulatory matters. Includes energy, environmental public information, software and technical support, regulatory, telecommunications, and other miscellaneous forums. Free access is available by dialing (517) 882-1421.

Energy Efficiency and Renewable Energy Network (EREN)
Uniform Resource Locator: http://www.eren.doe.gov. EREN is a gateway to energy efficiency and renewable energy information from national laboratories and other organizations. Provides single-point access to computer bulletin boards; on-line catalogs; lists of manufacturers and vendors; and World Wide Web, Gopher, Telnet and Wide Area Information servers. For information call: (800) 363-3732.

Energy Ideas Clearinghouse Bulletin Board Service
Washington State Energy Office, 809 Legion Way, FA-11, Olympia, WA 98504. (206) 956-2237. A helpful and comprehensive electronic bulletin board system for technical information about energy efficiency and renewable energy as applied to commercial and industrial facilities. Toll-free access is available from 18 western states (AZ, CA, CO, ID, IA, KS, MN, MT, NB, NV, NM, ND, OR, SD, TX, UT, WA, WY) by dialing (800) 797-7754.

Federal Energy Regulatory Commission Hotline
(202) 208-1163. Contains data on regional powerflow base-cases and transmission utility planning reports as required under the National Energy Policy Act of 1992.

LOGIN (Local Government Information Network)
LOGIN Information Services, 245 East Six Street, Suite 809, St. Paul, MN 55101. (800) 328-1921. LOGIN's *News and Current Affairs* bulletin board selects and condenses news of interest to local governments. Local government officials can post messages and read postings from other communities.

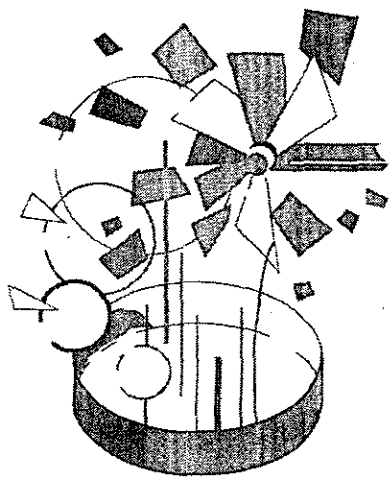
APPENDIX F: POWER PLANT GENERATING EFFICIENCY

BACKGROUND

What is generating efficiency? Generating efficiency, or fuel efficiency, refers to the percentage of energy content in the fuel which a power plant actually converts into electrical energy. The higher the efficiency, the more electricity can be produced from a given fuel input.

Why is it important? The efficient use of energy, especially from non-renewable energy sources, is important for several reasons. First, the more efficient the power plant, the less fuel will be consumed for a given level of electricity output. Less fuel consumption means valuable resources are conserved.

Second, since a more efficient plant consumes less fuel than a less efficient plant of comparable electrical output (for a given fuel), the environmental impacts associated with power production will be less severe. For example, for steam cycle or combined cycle thermal power plants there will be less thermal discharge, so the need for cooling water will be lessened. New generations of combustion turbines tend to reflect both improvements in efficiency as well as improvements in emissions, and therefore the air quality impacts of new technologies are typically less.



Third, since fuel costs can represent as much as 60 percent of the total lifetime cost (includes capital, fuel, and operations and maintenance costs) for some technologies, the efficiency of the power plant can play a large role in its economic viability. More efficient power plants will also be less vulnerable to higher than expected fuel prices than less efficient plants.

Can older power plants be made more efficient? Yes. One way to capture the benefits of efficiency while simultaneously dealing with the problem of aging power plants is through repowering. In one method of repowering, the existing boiler is replaced by one or more combustion turbines and heat recovery steam generators, while the existing steam turbine remains in service. Not only does the output of the plant increase considerably, but the generating efficiency often increases dramatically while air emissions are greatly reduced. Often the repowered configuration will be able to utilize much of the existing infrastructure at the site, thereby offering the potential to reduce some of the environmental and economic costs compared to a new site.

Why is cogeneration efficient? Cogeneration is defined as the *sequential* use of energy to produce useful thermal energy for an industrial or commercial process as well as electricity. Many industrial processes need large quantities of thermal energy (typically in the form of hot water or steam). Many power plants create a large amount of waste heat that must be dealt with. The key to cogeneration is to turn the waste heat from the power plant into a useful form of thermal energy for a nearby industrial process. By generating both electricity and needed thermal energy at the same time (hence the name *cogeneration*), there is tremendous potential for increased efficiency and reduced environmental impacts over the case where electricity and needed thermal energy are produced separately.

Is generating efficiency important for power plants that use renewable resources? Energy conversion efficiency takes on a different meaning for plants that use renewable resources. For example, solar technologies are land- and capital-intensive, and certain types of solar technologies and configurations are more land-intensive and capital-intensive than others (for a given electrical output). Since the "fuel" (i.e., solar insolation) is free and inexhaustible, the efficiency with which the solar input is converted to electrical output is not necessarily an indicator of how "good" a project is (although the conversion efficiency could be important in sit-

uations where it is important to maximize the electrical output in a constrained land-use situation [e.g., rooftop or substation photovoltaic system]). Increased efficiency, however, may yield significant savings in capital costs and land use. Project developers must weigh the benefits of increased solar-to-electrical efficiency against any additional cost required to achieve that efficiency.

What factors influence a plant's efficiency? Among the many factors that influence the efficiency with which a power plant converts its fuel input to electricity are:

- The technology type (e.g., gas turbine-based, steam turbine based, fuel cells)

- The fuel type (e.g., a given gas turbine will have a two percent to three percent higher output and a one percent to two percent improvement in efficiency when operating on natural gas rather than distillate oil)

- The choice of equipment manufacturer and product line. Most gas turbine manufacturers offer gas turbines in a wide range of sizes and capabilities. In general, the newer the product line, the more efficient the equipment. A particular model will typically be uprated in output and efficiency over a period of several years)

- The equipment configuration (e.g., gas-turbine based configurations include simple cycle mode, combined cycle mode [with the addition of a heat recovery steam generator and a steam turbine], and cogeneration modes)

- The operating profile (e.g., baseload operation vs. frequent cycling)

- The level of power output (e.g., power plants are typically optimized to be most efficient at rated [100 percent output] conditions, and are less efficient at off-rated [less than 100 percent output] conditions

- Site-specific conditions (e.g., elevation, ambient temperature, relative humidity)

- Equipment "add-ons" (e.g., emissions controls tend to decrease the facility's efficiency and output, while inlet air evaporative cooling or chillers for gas turbines in warm climates tend to increase the output)

WHAT LAWS, ORDINANCES, REGULATIONS, AND STANDARDS REGULATE EFFICIENCY FOR POWER PLANTS?

The only types of projects which must meet a numerical efficiency standard are certain classes of cogeneration projects. Those cogeneration projects must meet the Federal Energy Regulatory Commission (FERC) efficiency standard. In addition, the California Environmental Quality Act (CEQA) addresses fuel efficiency through its examination of energy resources impacts. See the section entitled "How is Efficiency Measured?" on page F.5 for a discussion of the terms used to measure and describe efficiency.

FERC efficiency standard. Title 18 Code of Federal Regulations, Part 292 contains the efficiency criteria for projects which are certified as Qualifying Facility (QF) cogeneration projects. These standards were created as part of the Public Utility Regulatory Policies Act of 1978 (PURPA), and were the nation's first efficiency standards. The standard which must be met depends on whether the facility is a topping-cycle or bottoming-cycle cogeneration facility.

A topping-cycle cogeneration facility uses the energy input to the facility to produce useful power output first, and then uses the waste heat to provide useful thermal energy. A bottoming-cycle cogeneration facility uses the energy input to the facility to produce a useful thermal energy process first, and then uses the waste (exhaust) heat from that process for power production.

For topping-cycle facilities, the efficiency standard depends on the operating standard. The operating standard is calculated as the useful thermal energy output of the facility divided by the total energy output, on an annual basis and expressed as a percentage. The operating standard must be at least five percent in order for the facility to qualify as a cogeneration facility. For projects with an operating standard between 5 percent and 15 percent, the FERC efficiency standard is 45 percent (net, lower heating value (LHV)). For projects with an operating standard greater than 15 percent, the FERC efficiency standard is 42.5 percent (net, LHV).

For bottoming-cycle cogeneration facilities, there is no minimum operating standard, and the FERC efficiency standard is 45 percent (net, LHV).

An actual project's FERC efficiency is calculated as described in the preceding section and compared to the appropriate standard.

- California Environmental Quality Act (CEQA). CEQA does not set numerical standards for efficiency or promote efficiency per se, but it does have several provisions which relate to energy resources impacts. The inefficient and unnecessary consumption of energy (particularly in the form of non-renewable fuels such as natural gas and oil) constitutes an adverse environmental impact [CEQA Guidelines, Title 14 California Code of Regulations section 151 26(c)]. This adverse environmental impact is considered significant if it will encourage activities which result in the use of large amounts of fuel, or use fuel or energy in a wasteful manner [CEQA Guidelines, 14 CCR Appendix G, items (n) and (o)].

CEQA requires the examination of alternatives if the project has the potential for significant adverse impacts with respect to energy use. "Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy." [CEQA Guidelines, 14 CCR Appendix F, section II.E]

The next step is to identify whether any of the alternatives is feasible (from both a technical and economic standpoint) and meets the project objectives. If any feasible alternative would eliminate or substantially reduce the significant environmental impact (and not result in other significant environmental impacts that cannot be mitigated), then the project should either be redesigned to incorporate the feasible alternative, or there should be some other mitigation measure to account for the fuel "wasted" by the project.

UNDER WHAT CIRCUMSTANCES SHOULD SUCH A CEQA ANALYSIS BE PERFORMED?

A CEQA analysis of power plant generating efficiency is not necessary for projects that use renewable resources such as wind and solar since the "fuel" is inexhaustible and hence cannot be wasted. For dedicated solar thermal or solar photovoltaic plants, there may be other environmental impacts such as land use that could be mitigated to a certain extent by more efficient technologies or equipment configurations. As such, there may be a reason to consider more efficient technologies because of other CEQA requirements. In addition, some solar thermal power plants such as Luz Solar Electric Generating systems (SEGS) units have natural gas-fired backup capability, and therefore do use a non-renewable fuel source.

Proposed projects that burn natural gas are the most likely candidates for CEQA efficiency analyses, since natural gas is a non-renewable fossil fuel source. The issue of whether a natural gas-fired project uses a significant amount of natural gas, and whether that fuel use is wasteful, depends on several factors. By itself, any project that uses a significant amount of natural gas could be considered to have an adverse impact on the natural gas supply. In light of the alternatives, however, the project could result in an overall reduction in natural gas use. For example, a proposed project may result in an overall reduction in natural gas consumption if the electricity it produces results in displacing electricity that would otherwise be produced from less efficient existing units. A cogeneration project that produces both electricity and useful thermal energy may result in an overall reduction in natural gas consumption compared to the case where electricity and useful thermal energy are produced by separate means.

A repowering project may increase the consumption of natural gas at the existing site because the electrical output of the site may increase by a factor of three, but there will be an overall system decrease in natural gas due to retiring the existing boiler and displacing generation by other inefficient plants on the system.

Evolving technologies that use natural gas, such as fuel cells, may not at the present time be more efficient than commercially-available technologies, but have the potential to dramatically improve natural gas conversion efficiencies in the future. From an efficiency standpoint, projects such as these should be encouraged.

Note that even if a project meets one or more of the conditions described in the paragraph above, it could still be considered a wasteful use of fuel if it is not the most efficient alternative. In general, project proponents have an incentive to propose efficient projects, since fuel costs are often a major portion of the total project lifetime costs. They may not, however, choose the most efficient project possible if the cost of the equipment is prohibitive or there are other barriers to such a project.

One way to deal with the significance of the amount of natural gas that would be wasted by a project compared to the most efficient project possible is to consider how much more fuel would be consumed on an annual basis by the less efficient project.

Differences in annual fuel consumption are affected by three factors: the size (output capacity) of the project, the efficiencies of the two alternatives, and the number of hours a year the plant is expected to operate. Table F-1 shows some examples of the effects of these variables on the amount of natural gas that would be wasted if the less efficient alternative is chosen.

As shown in Table F-1, the higher the output of the project, the more fuel will be wasted for a given difference in efficiencies. The bigger the discrepancy in efficiencies between alternatives, the more fuel will be wasted. The more frequently the plant will operate during the year, the more fuel will be wasted for a given difference in efficiencies.

While Table F-1 is not intended to serve as a definitive guide to all possible situations which may be encountered by local governments during power plant permitting, it provides a useful reference point for assessing the significance of differences in fuel usage among alternative projects. Local governments can apply the results of Table F-1 to their particular situation in deciding whether to perform a detailed efficiency analysis for a proposed project (see the four-step process on page F-6).

IDEAS FOR ENSURING EFFICIENT ELECTRICITY GENERATION

Many factors determine the efficiency of an electric generation facility. For facilities that use nonrenewable fossil fuels such as natural gas, a great emphasis should be placed on efficient equipment and cycle configurations. The desire to improve efficiency, however, must be viewed in light of other constraints, including technical constraints, environmental constraints, economic constraints, and project objectives. Thus, the "best" project may not necessarily be the most efficient project.

For dedicated solar thermal power plants, the "fuel" (i.e., solar insolation) is free and inexhaustible. As such, the efficiency with which the solar input is converted to electrical output is not necessarily an indicator of how "good" a project is. More important design considerations may include: the amount of land required and the associated land use implications, amount of water required, and the required operating profile (e.g., if the ability to operate at night is required, a backup or storage system is required).. The amount of land required for a given electrical output depends not only on the solar-to-electrical efficiency but also on such factors as the technology type, the density of the solar collection field (the amount of solar collection surface per unit of land) and whether the plant has thermal storage capability.

For general plan and implementation ideas, please turn to page F.11.

WHAT EFFICIENCY CAN BE ACHIEVED FROM VARIOUS TECHNOLOGIES?

This section provides a general idea of the range of heat rates and energy conversion efficiencies that can be expected from various power plant technologies. The technologies are divided into two categories: those that are currently commercially available and those that are likely to be commercially available in the near future.

Except as noted below, heat rates (net, higher heating value) are used to describe the efficiency of the technologies, with the corresponding generating efficiency in parentheses. The measurement of efficiency is discussed in the box on the next page.

- For gas turbine-based power plants, heat rates are given both in lower heating value (LHV) and higher heating value (HHV). Such heat rates are referenced to ambient conditions of sea level, 59 degrees Fahrenheit and 60 percent relative humidity, and assume that the plant is operating at its full- load output capability on natural gas. In general, altitude, hotter climates and part-load operation degrade performance.

- Overall project efficiency is used to describe the efficiency of cogeneration power plants.

- Chemical-to-electrical conversion efficiency is used to describe the efficiency of fuel cells. Both LHV and HHV efficiencies are presented.

- Solar-to-electrical conversion efficiency is used to describe the efficiency of solar thermal and photovoltaic technologies.

Power Plant Technologies That Are Currently Available Commercially.

Steam turbine-based power plants in California which have boilers fueled by natural gas, oil, coal, or nuclear fission typically have heat rates (efficiencies) in the range of 10,700 Btu/kWh (31.9%) to 9,000 Btu/ kWh (37.9%).

Gas turbine-based power plants which operate in simple cycle mode (no steam injection to the gas turbine) typically have HHV heat rates in the range of 24,660 Btu/kWh (13.8%) to 9490 Btu/kWh

HOW IS EFFICIENCY MEASURED?

There are several terms that are used to measure and describe the efficiency of a power plant. These include:

- Generating efficiency (%)— also known as fuel efficiency, or energy conversion efficiency, typically expressed as a percentage. Generating efficiency refers to the amount of electrical energy produced divided by the amount of energy (in the fuel) required to generate that electricity. For thermal power plants, thermal efficiency is a term that also describes generating efficiency.

It is necessary to state whether the efficiency is a *gross* or *net* value. The *gross* generating efficiency is based on the actual amount of electricity produced by the facility's generator(s), while the *net* generating efficiency is based on the net electricity produced. The net electrical production is the gross amount minus the electricity needed to run the facility's auxiliary loads. Thus, the net generating efficiency is a measure of the efficiency with which the facility produces electricity that is available for sale.

In addition to identifying whether the efficiency is a gross or net value, it is necessary to know whether the efficiency calculated is based on the fuel's lower heating value (LHV) or higher heating value (HHV). The higher heating value is the total chemical energy in the fuel, which accounts for the total heat given up when the fuel is burned (including the formation of water vapor.) The lower heating value is the usable energy content of the fuel (i.e., it assumes that all of the products of combustion remain gaseous, and thus the energy released when water vapor is condensed cannot be recovered.)

The efficiency of steam turbine-based power plants (i.e., boilers with steam turbines) is usually expressed in terms of the fuel's higher heating value, while the efficiency of gas turbine-based power plants (e.g., combustion turbines and combined cycles) is typically expressed on the basis of the fuel's lower heating value. For natural gas, the ratio of the fuel's higher heating value to its lower heating value is 1.11 to 1.

In order to be certain that appropriate comparisons are made among various projects' efficiencies, it is necessary to convert all efficiency values to the same type. See the box on page F.10 for sample calculations of converting from gross to net values, and from lower heating values to higher heating values.

- Heat rate (Btu/kWh) — the reciprocal of efficiency, it is the amount of thermal energy required to produce a given amount of electrical energy. It is usually specified as the amount of fuel (measured in Btus) needed to generate one kilowatt-hour (kWh) of electrical output. Like the measurement of generating efficiency, it is necessary to specify whether the heat rate is based on the gross or net electrical output, and whether the fuel input is based on the fuel's lower or higher heating value. A facility's generating efficiency and heat rate are related by the following equation:

  - Generating efficiency = $\frac{(3413\ \text{Btu/kWh}) \times 100\%}{(\text{heat rate in Btu/kWh})}$

Note that the lower the heat rate is, the more efficient the power plant is. See the box on page F.10 for more on the conversion of generating efficiency to heat rate.

- Overall project efficiency (cogeneration only) (%) — the sum of the amount of electrical energy produced and the amount of useful thermal energy produced, divided by the total fuel energy input required to generate that electricity and useful thermal energy, expressed as a percentage. All three terms (electrical energy, useful thermal energy, and fuel input energy) must be expressed in the same engineering units (for example, in Btus.)

- Federal Energy Regulatory Commission (FERC) efficiency (%) — this efficiency must be calculated for facilities which need Qualifying Facility cogeneration status, and that use fuel input in the form of natural gas or oil. It is calculated by summing the amount of useful electrical energy produced and one-half the amount of useful thermal energy produced, and dividing by the energy input from oil and natural gas to the cogeneration facility, expressed as a percentage, and based on the net electrical output and the fuel's lower heating value.

TABLE F-1
FUEL CONSUMPTION DIFFERENCE AS A FUNCTION OF PROJECT CAPACITY, EFFICIENCY AND OPERATING PROFILE
(Compared with a proposed Project with an Efficiency of 40% [HHV, gross])

Project capacity (proposed & alternate)	Efficiency of alternate project (HHV, gross)	Number of hour operated per year	Difference in yearly nat. gas consumption	# of homes this difference could heat or a year[1]
1 MW	50%	7000	1.19×10^{10} Btu	199
	45%		6.64×10^{9} Btu	111
	41%		1.46×10^{9} Btu	24
	50%	3500	5.97×10^{9} Btu	100
		1000	1.71×10^{9} Btu	28
25 MW	50%	7000	2.99×10^{11} Btu	4,977
	45%		1.66×10^{11} Btu	2,765
	41%		3.64×10^{10} Btu	607
	50%	3500	1.49×10^{11} Btu	2,489
		1000	4.27×10^{10} Btu	711
50 MW	50%	7000	5.97×10^{11} Btu	9,955
	45%		3.32×10^{11} Btu	5,530
	41%		7.28×10^{10} Btu	1,214
	50%	3500	2.99×10^{11} Btu	4,977
		1000	8.53×10^{10} Btu	1,422

[1] Based on an annual average household heating requirement of 60 million Btu. A typical household in Pacific Gas & Electric territory consumes 74 million Btu per year, a typical household in The Gas Company territory consumes 62 million Btu per year, a typical house hold in San Diego Gas & Electric territory consumes 42 million Btu per year.

PROCEDURE FOR PERFORMING A DETAILED EFFICIENCY ANALYSIS FOR A PROPOSED POWER PLANT PROJECT

Step #1: Analyze project for conformance with FERC QF efficiency standard (if applicable). If the project is a cogeneration project that must be certified as a FERC QF, the first step is to confirm whether the project is a topping cycle or a bottoming cycle, and then examine the project proponent's assumptions and calculations in order to determine if the project will comply with the appropriate efficiency and operating standards on an annual basis. Confirm further that the project proponent has applied for or received FERC certification as a QF.

Step #2: Analyze the project for adverse energy impacts. The inefficient and unnecessary consumption of energy (particularly in the form of non-renewable fuels such as natural gas and oil) constitutes an adverse environmental impact [CEQA Guidelines, Title 14 California Code of Regulations section 15126(c)]. This adverse environmental impact is considered significant if it will encourage activities which result in the use of large amounts of fuel, or use fuel or energy in a wasteful manner [CEQA Guidelines, 14 CCR Appendix G, items (n) and (o)].

Step #3: Analyze alternatives to the project in order to determine if the energy impacts are significant. The purpose of this step is to determine if there are more efficient alternatives that could result in a significant decrease in natural gas consumption and that are feasible. Such a decrease in natural gas consumption must either eliminate or substantially mitigate the adverse impact.

In order to accomplish this, the local agency can ask the developer for information on the proposed project configuration (number and type of gas turbines, whether cogeneration or non-cogeneration, combined cycle or simple cycle or STIG, whether any heat recovery steam generator has additional firing capability, steam turbine output), its expected yearly operating profile (number of hours expected to operate per year in each mode [e.g., full load, part load, hot standby]), and any future plans related to major changes in equipment or operating profile.

The local agency can also ask the project developer for information on other alternatives which were considered. This should include both non-fossil fueled alternatives as well as other natural gas-fired project configurations and equipment manufacturers. Project developers should provide heat rate information on alternatives which are more efficient than the proposed project. They should provide information on the amount of natural gas that could be saved each year if a more efficient alternative were chosen, and should discuss why a more efficient alternative was not chosen.

Step #4: Determine whether mitigation measures are feasible in order to eliminate the significant adverse energy impact. First, determine if any of the more efficient alternatives would result in totally or substantially mitigating the adverse impact, and then determine whether any of the alternatives is feasible. (Note: the local agency should not necessarily rely on the project developer's assessment of feasibility, but should consider the items discussed in the last paragraph of this step.)

If the fuel savings with a more efficient alternative are substantial, and the alternative is feasible, the local agency must pursue feasible mitigation measures. These could take the form of requiring the project developer to redesign the project in order to incorporate the more efficient design, or requiring other feasible energy-related mitigation measures which could compensate for the fuel "wasted" by the project.

Note that the outcome of this analysis depends on the definition of feasibility. To be considered feasible, an alternative must be able to meet the project's technical objectives (e.g., available for installation within the project's time frame, meet the project's needs for energy supply and operational characteristics, be sufficiently reliable, and capable of meeting licensing requirements). It also must be capable of being financed and must be cost-effective.

(36.0%). In terms of LHV, the heat rates (and efficiencies) range from 22,220 Btu/kWh (15.4%) to 8,550 Btu/kWh (39.9%). The lowest heat rates (highest efficiencies) are typical of the newest products and those which are optimized for simple cycle operation (not necessarily the largest machines), while the highest heat rates (lowest efficiencies) are typical of machines under 2 MW. One simple cycle gas turbine which is expected to be offered in 1996 will have a HHV heat rate of 9100 Btu/kWh (37.5% efficiency). In terms of LHV the heat rate (and efficiency) is 8,200 Btu/kWh (41.6%). Note: all of these figures are gross values, not net.

Steam-injected gas turbines (STIGs) typically have HHV heat rates in the range of 10,000 Btu/kWh (34.1 %) to 8640 Btu/kWh (39.5%). In terms of LHV, the heat rates (and efficiencies) range from 9020 Btu/kWh (37.8%) to 7780 Btu/kWh (43.9%). Note: all of these figures are gross values, not net.

Cogeneration power plants (gas turbine-based) typically have overall project efficiencies in the range of 40% to greater than 70%. To a large extent, the efficiency depends on the relationship between the amount of thermal energy produced and the amount of electrical energy produced.

The term operating standard is used to refer to the ratio of useful thermal energy produced to the total (useful thermal plus useful electrical) energy produced, expressed as a percentage. Since the combustion of fossil fuels for boiling water (for thermal process needs) is more efficient than the combustion of fossil fuels for generating electricity, in general the higher the operating standard, the higher the cogeneration efficiency. For operating standards in the range of 5%, the efficiency will likely be near the lower end, while facilities with operating standards in the range of 60% or higher will likely have efficiencies near the higher end.

The efficiency is also a function of the gas turbine configuration, with simple-cycle cogeneration configurations showing lower efficiencies than combined-cycle cogeneration configurations for a given operating standard.

New combined cycle power plants (one or more gas turbines and HRSGs paired with a steam turbine) typically have full-load HHV heat rates in the range of 10,350 Btu/kWh (33.0%) to 6630 Btu/kWh (51.4%). In terms of LHV, the heat rates (and efficiencies) range from 9,330 Btu/kWh (36.6%) to 5980 Btu/kWh (57.1 %). One manufacturer has recently announced the development of a combined cycle that can achieve a LHV efficiency of 60% (equal to about 54% on a HHV basis). Projects greater than 200 MW are likely to have heat rates in the lower range (i.e., higher efficiency range), while projects less than 10 MW are likely to have heat rates in the upper range.

Repowered combined cycle power plants typically have slightly higher heat rates (lower efficiencies) than their new combined cycle counterparts. A drop in efficiency of two or three percentage points (compared to the same gas turbine(s) paired with an optimized steam turbine) is typical.

The lower efficiency for repowered projects is due to the fact that the new gas turbine(s) are paired with an existing steam turbine(s). It may not be possible to provide an exact match between the gas turbine's exhaust heat and the steam turbine's requirements since gas turbines are available only in discrete sizes. Also, a new steam turbine is likely to be more efficient than an existing steam turbine which could be as much as 30 or 40 years old (although steam turbine refurbishment at the time of repowering could improve the overall efficiency).

Note, however, that repowering efficiencies that are two or three percentage points less efficient than new combined cycles are still a major improvement over the boiler configuration they replace (see steam turbine-based power plants above.)

Geothermal power plants have heat rates which vary widely, depending on the quality and type of the geothermal resource. Vapor-dominated geothermal plants in operation in the Geysers area (Lake and Sonoma County) typically have heat rates in the range of 22,000 Btu/kWh (15.5%) to 18,500 Btu/kWh (18.4%). Future development of liquid- dominated resources using flash steam technologies is estimated to produce heat rates in the range of 24,000 Btu/kWh (14.2%) to 12,800 Btu/kWh (26.7%), with double- flash configurations providing better heat rates than single- flash configurations. Future development of liquid-dominated binary technologies is estimated to produce heat rates of about 23,000 Btu/kWh (14.8%).

Geothermal resources are considered to be renewable only if the rate of geothermal steam or liquid extraction does not exceed the rate at which the resource is renewed. Therefore, it is important to both manage the resource appropriately and to use efficient energy conver-

sion equipment in order to maximize the resource potential.

Solar thermal power plants include concentrating methods (which include central receiver, parabolic dish, and parabolic trough designs) and salt-gradient solar ponds. Of these, only the parabolic trough design is commercially available. This design is typified by the Luz SEGS solar plants, which are hybrid solar plants that have natural gas-firing backup capability in order to provide electricity at night or during periods of cloud cover. The overall annual average solar-to-electrical efficiency is about 14% to 15%. The heat rate when operating on natural gas is 10,800 Btu/kWh (31.6%) . Note, however, that the "fuel" is free when operating in the solar-only mode.

Biomass power plants use biomass resources (e.g., forest and wood products, agricultural field and food crops, and manure) in waste-to-energy facilities as a fuel in one of three typical processes: direct combustion in a fairly conventional steam boiler; thermal gasification with air to create a gas that is combusted in an engine-generator set; and anaerobic digestion reactors fueled by manure which create a biogas that is then combusted in an engine-generator set. Typical efficiencies for these three technologies are: 20,000 Btu/kWh (17%) to 14,100 Btu/kWh (24%) for direct combustion boiler-steam turbine configurations; 15,230Btu/kWh (22.4%) to 12,540 Btu/kWh (27.2%) for gasification technologies coupled with engine-generator sets; and 20,000 Btu/kWh (17%) to 15,000 Btu/kWh (23%) for anaerobic fermentation technologies coupled with engine-generator sets.

Municipal solid waste (MSW) power plants use MSW as a fuel in waste-to-energy facilities. Mass burn facilities that directly combust MSW with minimal processing typically have heat rates in the range of 16,000 Btu/kWh (21.3%) to 13,000 Btu/kWh (26.3%). Refuse-derived fuel (RDF) facilities that directly combust pelletized or fluff MSW that is the by-product of a resource recovery operation typically have heat rates in the range of 15,000 Btu/kWh (22.8%) to 12,000 Btu/kWh (28.4%).

Solar photovoltaic (PV) power plants include three major types, named for the type of PV collector modules: flatplate crystalline silicon, flatplate thin film, and concentrators. Today's generations of PVs have the following typical annual average solar-to-electric conversion efficiencies: 11 to 13% for flatplate crystalline silicon; 4 to 6% for flat-plate thin film; and a recent world record of greater than 20% for a commercial-scale (2 kW) concentrating system.

Fuel cell power plants include several types, named for the electrolyte material used: phosphoric acid, molten carbonate, solid oxide, alkaline, and proton exchange membrane. Of these, only phosphoric acid fuel cells (PAFCs) are currently sold commercially. International Fuel Cells/ONSI Corporation's PC-25C is a 200 kW PAFC that is capable of achieving a chemical-to-electrical LHV efficiency of 40% on natural gas (equal to a HHV efficiency of 36%). It also produces about 700,000 Btu/hr of low-temperature heat which, if used in a cogeneration application, raises the overall project efficiency to about 77%.

Power Plant Technologies That Are On The Horizon.

Advanced Gas Turbines include the humid air turbine, chemically recuperated gas turbine, and cycle configurations being developed as part of the Collaborative Advanced Gas Turbine (CAGT) program (whose participants include the Electric Power Research Institute and nearly all of California's publicly-owned and privately-owned electric utilities) and the U.S. Department of Energy's (DOE's) Advanced Turbine Systems (ATS) program. The humid air turbine cycle is predicted to have a LHV efficiency of 63% (equal to a HHV efficiency of 57%). The chemically recuperated gas turbine, which is in the conceptual design phase of development, is predicted to have a LHV efficiency of 62 to 63% (equal to a HHV efficiency of 56 to 57%). Efficiencies for the cycles being developed as part of the CAGT program should be about 60% (LHV) or higher. The DOE's ATS program has a minimum efficiency goal of 60% (LHV), with the hope that the cycles developed will be well above that level.

Advanced solar photovoltaic power plants are expected to achieve the following annual average solar-to-electrical conversion efficiencies after the year 2010: greater than 18% for commercial flat-plate crystalline silicon; greater than 15% for commercial flat-plate thin film; and greater than 25% for commercial concentrating systems.

Advanced fuel cell power plants are expected to achieve very high efficiencies, both in terms of electrical efficiency and overall cogeneration efficiency. By the year 2000, phosphoric acid fuel

SAMPLE CALCULATIONS FOR COMPARING EFFICIENCIES AND HEAT RATES FOR VARIOUS PROJECT ALTERNATIVES

Suppose you are presented with two hypothetical power plants. Plant #1 is a conventional fossil-fueled (natural gas) steam turbine-generator with an efficiency of 33% (gross, higher heating value [HHV]), while Plant #2 is a natural gas-fired combustion turbine with a heat rate of 10,000 Btu/kWh (net, lower heating value [LHV]). Plant #1 has a gross output of 100 megawatts (MW), with total auxiliary loads of 5 MW. Plant #2 has a gross output of 120 MW and auxiliary loads that total 4 MW.

Q. Which plant is more efficient?

A. In order to determine which plant is more efficient, it is necessary to convert both measurements of efficiency to the same basis. It is easiest to work with heat rates, since the relationship between fuel use and electrical output is explicit in the heat rate term, whereas it is only implied in the efficiency when expressed as a percentage. Since the higher heating value heat rate is the better indicator of the amount of fuel which must be burned in order to produce a given electrical output, we will convert both efficiency measurements to heat rates based on the net electrical output and the fuel's higher heating value.

Beginning with Plant #1, we first convert the efficiency expressed as a percentage to the corresponding heat rate as follows:

Plant #1 heat rate (gross, HHV)=
(3413 Btu/kWh)/33% (gross, HHV)=
10,342 Btu/kWh (gross, HHV)

Now the gross HHV heat rate for Plant #1 needs to be converted to the net HHV heat rate. From the information given in the example, Plant #1 has a gross output of 100 MW and a net output of 95 MW (100 MW minus the 5 MW of auxiliary loads). The net HHV heat rate is:

Plant #1 heat rate (net, HHV)=
[10,342 Btu/kWh (gross, HHV)]*[(100 MWgross)/(95 MWnet)] =
10,886 Btu/kWh(net, HHV)

Now the heat rate for Plant #2 needs to be converted from its net LHV value to its net HHV value. For natural gas, the ratio of the fuel's higher heating value to its lower heating value is 1.11. Therefore:

Plant #2 heat rate (net, HHV)=
10,000 Btu/kWh (net, LHV)*1.11HHV/LHV=
11,100 Btu/kWh (net, HHV)

Thus, plant #1 is slightly more efficient than plant #2 since plant #1 has a *lower* heat rate.

cells could achieve a chemical-to-electrical LHV efficiency of about 54% (equal to about 49% on a HHV basis). Molten carbonate fuel cells are being developed as second-generation alternatives to phosphoric acid fuel cells, with one objective being to improve significantly upon the heat rate limitations of phosphoric acid fuel cells. The 2 MW Santa Clara Demonstration Project, the world's first demonstration of a utility-scale molten carbonate fuel cell, is expected to achieve a LHV chemical-to-electrical efficiency of 58% (equal to about 52% on a HHV basis). Follow-on commercial units are expected to have a LHV chemical-to-electrical efficiency of about 60% (equal to about 54% on a HHV basis). In cogeneration applications, advanced molten carbonate fuel cells could achieve overall project efficiencies approaching 80% to 90%.

GENERAL PLAN IDEAS

The following are ideas which can be incorporated into general plan policy language providing they are consistent with goals adopted in the general plan. As is true for any adopted general plan language, if the city or county does not actually implement the language, any action taken by the local government to authorize a project would be subject to challenge based on the lack of implementation of the general plan.

- The city/county can encourage the improvement of the overall generating efficiency of electric generation facilities by permitting new and repowered generation facilities that are the most efficient feasible, considering technical constraints, environmental constraints, economic constraints, and project objectives.

- The city/county can identify the amount of renewable resource potential (such as wind, solar, biomass, municipal solid waste, and geothermal) and appropriate areas for development of such resources in its jurisdiction, and can encourage facility configurations which use these resources efficiently.

- The city/county can encourage the development of efficient cogeneration facilities tied to existing industrial and commercial thermal or heating processes which can reduce overall energy use compared to that needed to generate the electricity and useful thermal energy separately.

- The city/county can encourage the development of efficient cogeneration facilities as a means to meet the electricity and thermal needs of future planned industrial and commercial facilities.

- The city/county can encourage the repowering of existing aging power plants as a means to improve the efficiency of existing plants, increase the site generating capacity, and meet air quality regulations.

- The city/county can encourage the commercial demonstration of new generating technologies which use renewable or nonrenewable resources more efficiently.

IMPLEMENTATION IDEAS

The following are suggestions for implementation ideas which can be applicable to energy facilities in general:

- **Develop an energy element to the general plan** which addresses electric generation facilities. Such an energy element should identify: the amount and location of renewable resource potential (including wind, solar, geothermal, biomass, hydroelectric, and municipal solid waste) suitable for large-scale and small-scale (distributed) electric generation; existing power plant sites that are candidates for repowering; existing industrial or commercial sites that are candidates for cogeneration; and sites of future industrial and commercial development that could be candidates for cogeneration or small-scale distributed energy systems.

- **Provide incentives for electric generation project developers** to propose demonstration projects using advanced, more efficient, natural gas conversion technologies. The incentives may include expedited permitting, and reduced permit or operating fees.

- **Require a pre-filing conference** with each project developer in order to obtain an understanding of the efficiency-related aspects of the project and whether a detailed CEQA examination of efficiency is warranted. For projects that use natural gas, it may be appropriate to ask questions such as:

  - What is the plant's gross output? Net output?
  - How many hours a year is it expected to operate?
  - Is it a cogeneration project?
  - If yes, is it required to meet the FERC efficiency standard?
  - What alternative project types and configurations were considered?
  - Which of the alternatives considered were more efficient?

• How much more efficient are they, and how much natural gas could be saved per year if a more efficient alternative were chosen?

• Why wasn't the more efficient alternative chosen?

CASE STUDY

The San Luis Obispo County Department of Building and Planning is in the process of developing an energy element as part of its General Plan. The element includes policies and guidelines relating to electric generation facilities. The energy element includes a policy which prioritizes the technologies which can meet the county's electricity needs. It states that first preference shall be for increased use of conservation and efficiency measures in all sectors of electricity use; second preference shall be for facilities that use renewable resources such as wind, solar, hydroelectric, biomass, and geothermal; third preference shall be for fossil fuel cogeneration facilities that produce electricity and process steam for industrial uses; and fourth preference shall be for fuel cells and high efficiency fossil fuel facilities on a case-by-case basis.

Contact: David Church, Energy Planner, Department of Planning and Building, San Luis Obispo County, County Government Center, San Luis Obispo, CA 93408, (805) 781-5600, FAX (805) 781-5624.

INFORMATION RESOURCES

The California Energy Commission's Facilities Engineering and Permit Assistance Office can aid local governments in understanding the efficiency implications of a particular project.

Contact: Judy Grau at (916) 654-4206.

RELATED ISSUES

- Energy Facility Planning (Chapter 3)
- Air Quality (Chapter 5.1)
- Water Use/Water Quality (Chapter 5.4)
- Appendix B, Energy Facility Descriptions and Issues

APPENDIX G: GLOSSARY

AC Induction Motor - Electric motor used in most household appliances. The motor works by creating a magnetic field in the rotating element of the motor, and varying the electric current flowing through stationary electric wires.

Acutely Hazardous Material - A material that is hazardous as a result of its relatively high level of acute toxicity.

Air Pollution - Unwanted particles, mists, fumes, or gases (pollutants) which have adverse effects on health and welfare, that are put into the atmosphere as a result of operation of industrial facilities, other human activities, or natural sources.

Alternating Current (AC) - An electric current that reverses its direction of flow from positive to negative at regular intervals, typically 60 times per second. The most efficient type of electric motors use AC.

Alternative Fuel - As defined pursuant to the Energy Policy Act of 1992 (EPAct), methanol, denatured ethanol and other alcohols, separately, or in mixtures with gasoline or other fuels, CNG, LNG, LPG, hydrogen, "coal-derived liquid fuels," fuels "other than alcohols" derived from "biological materials," electricity, or any other fuel determined to be "substantially not petroleum" and yielding "substantial energy security benefits and substantial environmental benefits."

Alternative Fuel Vehicle (AFV) - A vehicle powered by a fuel other than gasoline or diesel. Also referred to as clean air vehicles, AFVs produce less air pollution than gasoline- or diesel-powered vehicles.

Ambient Air Quality - The condition of outside air as determined by the measured levels of air pollutant concentrations within it. Measured levels are compared to federal and state air pollution standards.

Ampere/Amperage (Amp) - Standard unit used to measure electric current; proportional to the quantity of electrons flowing through a conductor past a given point in one second. Amperage is calculated by dividing watts by volts.

Anaerobic Digestion - Also known as methane fermentation or biological gasification, anaerobic digestion uses microbiological methods to produce a gas from biomass fuels such as animal manure, or municipal solid waste fuels such as sewage sludge from sewage treatment plants. See Appendix B, section B-1 for more information.

Anhydrous - The form of a material that is not mixed in water.

Aqueous - The form of a material when mixed with water.

Attainment - A status designation for an air district whose ambient air does not exceed the health-based ambient air quality standards set for a given pollutant (applies to either state or federal standards).

Avoided Cost - The cost that an electric utility would incur to produce or otherwise procure electric power, but does not incur because the utility purchases this power from qualifying facilities.

Base Load - The minimum constant level of electric demand that a utility's generating system must meet, expressed in terms of kilowatts or megawatts. Base load varies by season, due mainly to weather patterns and the resulting space heating and cooling requirements. The base load is typically lowest in the spring and fall, and higher in the winter and summer.

Baseload Unit - An electric generating unit that is normally operated continuously to meet the system's base load. Examples of such facilities include: *coal, geothermal,* and *nuclear* power plants, as well as *hydroelectric (run-of-river)* and *qualifying facilities.* Baseload units typically operate at full capacity for more than 5,000 hours a year.

Battery - A battery is a container, or group of containers, holding electrodes and an electrolyte for producing electric current by chemical reaction and storing energy. The individual containers are called "cells". Batteries produce Direct Current (DC).

Battery Life - Number of miles an electric vehicle will travel on one battery pack before the pack must be replaced.

Battery Storage (utility-scale) - Modular energy storage devices that store electricity in chemical form for use at a later time. See Appendix B, section B-2 for more information.

Best Available Control Technology (BACT) - The most up-to-date methods, systems, techniques, and production processes available to achieve the greatest feasible emission reduction for given regulated air pollutants and the processes that create them. BACT is a requirement of *New Source Review* and *Prevention of Significant Deterioration programs.*

Biennial Resource Plan Update (BRPU) - A California Public Utilities Commission proceeding that addresses the terms and conditions under which California utilities acquire future power resources, including power from independent energy suppliers.

Binary Cycle - A power generation technology for low-temperature geothermal resources. It is the combination of two distinct, closed fluid loops. Heat from the geothermal fluid in the first loop is transferred to a hydrocarbon fluid with a low boiling point in the second loop. The fluid in the second loop is the working fluid for the Rankine power generation cycle (vaporization, expansion through the turbine-generator, condensation, and compression). See Appendix B, section B-7 for more information on geothermal-based binary cycles.

Biomass - Energy resources derived from organic matter. These include wood, agricultural waste, and other living-cell material that produce heat energy through direction combustion, gasification, or fermentation processes. See Appendix B, section B-3 for more information.

British Thermal Unit (Btu) - A standard unit for measuring thermal energy or heat. A Btu is defined as the amount of heat energy required to raise the temperature of one pound of water by one degree Fahrenheit at sea level. One thousand Btu is abbreviated as MBtu, while one million Btu is abbreviated as MMBtu.

Business Plan (Hazardous Materials) - A plan that addresses the use and handling of hazardous materials and emergency response in the event of an accidental hazardous materials release. See also *Risk Management Prevention Plan.*

California Air Resources Board (CARB) - CARB conducts research, monitors California's air quality, and sets policies for controlling emissions from mobile sources. Additionally, CARB and local air districts monitor stationary source emissions and create programs and policies designed to lower pollution levels and achieve ambient air quality standards.

California Clean Air Act (CCAA) - A California law passed in 1988, and amended in 1992, which provides the basis for air quality planning and regulation independent of Federal regulations, and which establishes new authority for attaining and maintaining California's air quality standards by the earliest practicable date.

California Department of Fish and Game (CDFG) - A trustee agency responsible for managing and protecting California's fish, wildlife and native plant resources.

California Endangered Species Act - Enacted in 1970, it expresses the state's concern over California's threatened wildlife, defines rare and endangered wildlife, and gives authority to the Department of Fish and Game to "identify, conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat in California..."

California Environmental Quality Act (CEQA) - Enacted in 1970, it requires state agencies to develop programs to protect the environment. CEQA also requires that the environmental impacts of most large projects and programs be considered, and that measures be adopted to lessen impacts.

California Low Emission Vehicle Program - A California requirement for automakers to produce vehicles with fewer emissions than current EPA standards. The four categories of California Low Emission Vehicle Program standards are Transitional Low Emission Vehicle (TLEV), Low Emission Vehicle (LEV), Ultra-Low Emission Vehicle (ULEV), and Zero Emission Vehicle (ZEV).

California Occupational Health and Safety Administration (Cal. OSHA) - The state agency responsible for protection of workers against occupational injury.

California Porter-Cologne Act - Enacted in 1969, it controls discharge of pollutants into state waterways and onto state lands. It requires state and regional water quality boards to set water quality levels and to regulate industry to attain those levels.

California Public Utilities Commission - The state agency that regulates the rates and services of natural gas, electric, water, steam, pipeline, sewer, telephone, cellular and radio telephone, and telegraph utilities, as well as trucking, railroad, airline, moving, and privately-owned bus companies.

Carbon Dioxide (CO_2) - A product of combustion that has become an environmental concern in recent years. CO_2 does not directly impair human health, but it is a "greenhouse gas" that traps the earth's heat and may contribute to the potential for global warming.

Carbon Monoxide (CO) - A gas found in the exhaust of gasoline-powered vehicles. It results from combustion when there is not enough oxygen. Emissions are regulated by Federal law.

Carcinogenic - Capable of causing cancer.

Charge Inlet - The location on an electric vehicle where the power source is connected for recharging.

Charging Station - The physical device that provides a connection from a power source to an electric vehicle for charging.

Clean Fuel Vehicle (CFV) - Any vehicle certified by the EPA as meeting certain Federal emissions standards. The five categories of Federal CFV's, from least to most stringent, are TLEV, LEV, ULEV, ILEV and ZEV. CFVs are eligible for two Federal programs: The California Pilot Program and the Clean-Fuel Fleet Program. CFV exhaust emissions standards for light-duty vehicles and light-duty trucks are numerically identical to those of CARB's Low Emission Vehicle Program.

Coal -Black or brown rock, formed under pressure from organic fossils in prehistoric times, that is mined and then burned to produce heat energy. See Appendix B, section B-4, for more information on coal-fired power plants.

Cogeneration - Simultaneous production of heat energy and electrical or mechanical power from the same fuel in the same facility. A typical cogeneration facility produces electricity and steam or heat for industrial purposes. See Appendix B, section B-11 for more information.

Combined-Cycle Power Plant - An electric generating plant that uses waste heat from its combustion turbine(s) to produce steam for a conventional steam turbine. See Appendix B, section B-11 for more information.

Combustion turbine - see Gas Turbine.

Compressed Air Energy Storage (CAES) - An energy storage technology in which air is compressed by a gas turbine during low demand periods and is stored in an underground reservoir. During high demand periods, the stored air is discharged, heated by fossil fuel combustion, and fed to a turbine-expander for electricity production. See Appendix B, section B-11 for more information.

Corrosive Material - A material with high chemical reactivity that can directly damage the surface of metals or other materials, including human tissue such as eyes and skin.

Criteria Air Pollutant - An air pollutant for which acceptable levels of exposure can be determined, and for which an ambient air quality standard has been set.

Cumulative Impacts - Two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment which results from the incremental impacts of the project when added to other closely related past, present and probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Cycling Unit - see *Intermediate-load Unit.*

Demand-side Management (DSM) - Measures taken by a utility to influence the level or timing of customers' energy demand in order to optimize the use of available utility resources.

Direct Current (DC) - Electricity that flows continuously in one direction as contrasted with alternating current. Batteries produce Direct Current.

Direct Impacts - Direct or primary effects which are caused by a project and occur at the same time and place.

Distributed Energy Systems (also known as "distributed resources") - Small (50 kW to 50 MW), modular generation, storage, and demand-side management technologies that are strategically placed on electric customers' sites or near load centers in an electric grid so as to obtain benefits beyond the value of the electricity that is generated or stored. For example, distributed generation technologies show promise of allowing utilities to defer transmission and distribution system upgrades when placed at or near substations that are reaching their operating limits (see Appendix B, section B-14 for more on the use of solar photovoltaics for distributed uses). Promising distributed energy technologies include: solar photovoltaics, fuel cells, wind, small gas-fired engine-generators and gas turbines, utility-scale batteries, and customer efficiency/load management devices.

Distributed Generation - See *Distributed Energy Systems.*

Efficiency (thermal) - That percentage of the total energy content of a power plant's fuel which is converted into electricity, the remaining energy being lost to the environment as heat. The efficiency of an energy conversion is the ratio of the useful work or energy output to the energy input.

Electric Consumers Protection Act of 1986 - An amendment to the Federal Power Act which mandates that the Federal Energy Regulatory Commission evaluate the potential impact on the environment of proposed hydroelectric and electric projects under its jurisdiction. Requires extensive agency and public review and comment on proposed projects to determine the potential effects of the projects on the environment and how to mitigate the effects.

Electric Distribution - The delivery of electric energy to customers connected to the electric power distribution system. The distribution system links the transmission system to most customers. See Appendix B, section B-17 for more information.

Electric Energy Storage -The storage of surplus or low-cost electric energy during periods of low energy demand so that it will be available when needed. Technologies include: *battery storage (utility-scale); pumped hydroelectric storage; compressed air energy storage;* and *flywheel energy storage.*

Electricity - The class of physical phenomena arising from the existence and interaction of electric charge. Direct current (dc) electricity can be generated by such power generation technologies as fuel cells and solar photovoltaics. Alternating current (AC) electricity is electromagnetically induced by mechanical generators driven by steam, water (hydro), wind, or combustion turbines.

Electric Power Generation - The conversion of other forms of energy into electric energy. Electric energy is generated from such energy resources as fossil fuels, nuclear fuel, geothermal steam, falling water, and alternative and renewable energy sources. Appendix B addresses the various electric generation technologies.

Electric Power Research Institute - A nonprofit organization sponsored by the U.S. electric utility industry to manage more than 1600 electric power-related research and development programs. Its headquarters are in Palo Alto, California.

Electric Transmission - The transportation of bulk quantities of electric energy by means of electric conductors from generation sources to an electric distribution system, a load center, or an interface with a neighboring control area. See Appendix B, section B-17 for more information.

Electric and magnetic fields (EMF) - Electric and magnetic fields are produced by high-voltage transmission lines, low-voltage distribution lines, building wiring, electric appliances, and light fixtures, in addition to arising from many natural sources. Chapter 5.6 of the Guide focuses on the fields created by power lines and substations. Power lines carry electric currents that change direction (or alternate) 60 times per second. The alternating current produces electric and magnetic fields around the power lines.

Electric Vehicle (EV) - A vehicle that is propelled completely and exclusively by electric power.

Electrolyte - The medium of ion transfer between anode and cathode within the cell. Usually liquid or paste which is either acidic or basic.

Energy - The capability of doing work, expressed in units such as British thermal units (Btus), Watt-hours, kilowatt-hours (kWh), and calories. Forms of energy include: thermal, mechanical, electrical, potential, gravitational, and chemical. Electrical energy is defined as electric power (expressed in units such as kilowatts) supplied over time (e.g., in hours). Energy is transformed from one form to another in the generation and storage of electricity. See also *Power.*

Energy Policy Act of 1992 (EPAct) - A broad-ranging law impacting energy policy (PL 102-486). Titles III, IV, V, XV, and XIX of the Act deal with alternative transportation fuels. EPAct accelerates the purchase requirements for AFVs by the Federal fleet and requires fleets in large urban area to purchase AFVs. In addition, EPAct establishes tax incentives for purchasing AFVs, requires the conversion of conventional gasoline vehicles to operate on alternative fuels, and the installation of refueling or recharging facilities by the private sector.

Environmental Protection Agency (EPA) - A federal agency created in 1970 to permit coordinated governmental action for protection of the environment by systematic abatement and control of pollution through integration or research, monitoring, standards setting and enforcement activities.

Ethanol - Also known as ethyl alcohol or grain alcohol, ethanol is a colorless liquid that burns with a pale flame, producing water and carbon dioxide. Ethanol can be used as a motor vehicle fuel. See Appendix B, sections B-19 and B-20.c for more information.

Exempt Wholesale Generator (EWG) - A class of independent power producers, created by the National Energy Policy Act of 1992, which are exempt from the regulations of the Public Utility Holding Company Act, and which sell their power at wholesale rates which are regulated by the Federal Energy Regulatory Commission. EWGs are a mechanism for allowing electric utilities to compete in the independent power production market without becoming holding companies.

Federal Clean Air Act (FCAA) - A federal law passed in 1970, and amended in 1977 and 1990, which sets primary and secondary National Ambient Air Quality Standards for criteria air pollutants as the basis for the national program to improve air quality conditions.

Federal Clean Water Act (FCWA) - Federal law passed in 1977 and amended in 1987 and also known as the Federal Water Pollution Control Act. The Act provides for the restoration and maintenance of the nation's waterways. It requires the use of pollution control technology.

Federal Energy Regulatory Commission (FERC) - An independent regulatory commission within the U.S. Department of Energy that has jurisdiction over energy producers that sell or transport fuels for resale in interstate commerce; the authority to set oil and gas pipeline transportation rates and to set the value of oil and gas pipelines for rate-making purposes; regulates wholesale electric rates and hydroelectric plant licenses; and has jurisdiction over interstate transmission of electric energy and the authority to set rates, terms, and conditions of service.

Federal Power Act - A federal law originally enacted in 1935 that empowers the Federal Energy Regulatory Commission to regulate the interstate transmission and sale of electric power and to license hydroelectric facilities.

Flammable - Capable of burning and causing fire.

Flywheel Energy Storage - Also known as electromechanical batteries, flywheels are energy storage devices which convert electrical energy to mechanical energy (kinetic energy stored in rotational motion), for conversion to electricity at a later time. See Appendix B, section B-5 for more information.

Fossil Fuel - Oil, coal or natural gas that was formed in the earth in prehistoric times from remains of living-cell organisms.

Fuel Cell - An electrochemical engine (no moving parts) that converts the chemical energy of a fuel, such as hydrogen, and an oxidant, such as oxygen, directly to electricity. The principal components of a fuel cell are catalytically activated electrodes for the fuel (anode) and the oxidant (cathode) and an electrolyte to conduct ions between the two electrodes. See Appendix B, section B-6 for more information.

Fugitive Dust - Particulate matter entrained in the atmosphere from construction and farming activities, wind erosion of soil and storage piles, vehicle movement, and materials handling.

Gas turbine - Also known as a combustion turbine, a gas turbine combusts a mixture of fuel (such as natural gas or distillate oil) and compressed air in a combustion chamber to create hot combustion gases that drive a turbine-generator. See Appendix B, section B-11 for more information.

Geothermal Direct Use - Applications of geothermal energy (typically low- and moderate-temperature resources) that include industrial, agricultural, commercial, and residential direct uses such as water heating and space heating and cooling. See Appendix B, section B-21 for more information.

Geothermal Energy - Natural heat from within the earth that is captured for production of electric power or for direct heating uses such as space heating. See Appendix B, section B-7 for more information on geothermal power plants. See Appendix B, section B-21 for more on direct (non-electrical) uses of geothermal energy.

Hazardous Material - A material that poses the risk of causing injury or property damage if accidentally released into the environment. See also *Acutely Hazardous Material.*

Heat Rate - A measure of the amount of thermal energy needed to generate a given amount of electric energy. It is usually specified as the amount of fuel (measured in British thermal units, Btus) needed to generate one kilowatt-hour (kWh) of electrical output. See Appendix H for more information.

Heat Transfer - The process of transferring heat energy from one medium to another, such as transferring the heat produced by the combustion of fuel to water or steam in a boiler.

Heavy Metal Compounds - Compounds containing higher molecular weight metallic elements which are generally toxic in low concentrations to plant and animal life. Examples include mercury, cadmium, arsenic and lead.

Higher Heating Value - The total chemical energy in the fuel which accounts for the total heat given up when the fuel is burned (including the formation of water vapor.)

Horsepower (hp) - A unit for measuring the rate of doing work. One horsepower equals 745.7 Watts, or 0.7457 kilowatts.

Hydrocarbons (HC) - The hydrogen and carbon residue that are left over after gasoline combustion. Hydrocarbon emissions are regulated by Federal law.

Hydroelectric Power - Electric power that is generated by using the gravitational energy available when water flows from a higher to a lower elevation. See Appendix B, section B-8 for more information.

Independent Power Producer (IPP) - A non-utility power generating entity that is not a qualifying facility (QF). Independent power producers typically sell the power they generate to electric utilities at wholesale prices, and the utility then resells this power to end-use customers.

Indirect Impacts - Indirect or secondary effects which are caused by a project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Integrated Resource Planning - A planning and selection process for new energy resources that values the full range of alternatives, including new generating capacity, power purchases, energy conservation, district heating and cooling applications, and renewable energy resources, in order to provide adequate and reliable service to customers at the lowest system cost.

Intermediate-load Unit - An electric generating unit that can vary its operation is response to changes in electric demand. Also known as cycling units, they are usually used to meet the level of demand that exceeds base load. Intermediate-load units can be cycled daily, weekly, or both. Such units are typically combined-cycle power plants or older natural gas-fired boilers (see Appendix B, section B-11). They typically operate between 1,300 and 5,000 hours a year.

Investor-Owned Utility (IOU) - A private company that provides a utility, such as water, natural gas or electricity, to a specific service area. In California, IOUs are regulated by the California Public Utilities Commission.

Key Observation Points (KOPs) - View areas most sensitive to the potential visual impacts of a proposed project (e.g., residential and recreational areas).

Kilovolt (kV) - A unit of electric potential and electromotive force equal to the difference in electric potential between two points on a conducting wire. One kilovolt is equal to one thousand volts. Bulk transmission lines are typically those lines rated at 220 kV and above, while distribution lines are typically those lines rated at 115 kV and below.

Kilowatts (kW) - A unit of power equal to one thousand Watts. A unit of measure of the amount of electricity needed to operate given equipment. On a hot summer afternoon a typical home, with central air conditioning and other equipment in use, might have a demand of four kW.

Kilowatt-hour (kWh) - A unit of energy equal to one thousand Watt-hours, or 3,413 Btu. One kWh is the amount of energy required to run a 100-Watt light bulb for 10 hours, or the amount of energy required to run a 1000-Watt hair dryer for one hour.

Landfill Gas - Gas produced when organic matter decomposes in solid waste disposal sites, or landfills. Landfill gas can be flared, used on-site to fuel electric generators, or processed to meet natural gas pipeline-quality standards and then distributed. See Appendix B, section B-10 for more information.

Liquid-dominated Resources - Geothermal resources that are composed primarily of hot water or brine. See Appendix B, section B-7 for more information.

Liquified Petroleum Gas (LPG) - Propane or butane, or a mixture of these and other hydrocarbon gases, that has been liquified by pressurizing to approximately 190 pounds per square inch at ambient temperature. LPG can be used as an alternative to natural gas, and in alternative fuel vehicles. See Appendix B, section B-20.b for more information.

Lower Heating Value - The usable energy content of the fuel (i.e., it assumes that all of the products of combustion remain gaseous, and thus the energy released when water vapor is condensed cannot be recovered.)

Lowest Achievable Emission Rate (LAER) - The most up-to-date methods, systems, techniques, and production processes available to achieve the lowest emission rate allowed or achieved anywhere, for given regulated air pollutants and the processes that create them, without regard to cost and energy use.

Magnetohydrodynamics (MHD) - The process of generating electricity by passing a conductive fluid or plasma through a magnetic field. See Appendix B, section B-9 for more information.

Maximum Achievable Control Technology (MACT) - The most up-to-date methods, systems, techniques, and production processes available to achieve the maximum control for a given toxic air pollutant.

Megawatt (MW) - One thousand kilowatts (1,000 kW) or one million (1,000,000) Watts. One megawatt is enough energy to power 1,000 California homes per day.

Methanol - Also known as methyl alcohol or wood alcohol, methanol is a light, flammable liquid consisting of four parts hydrogen to one part each of carbon and oxygen. Methanol can be used as a motor vehicle fuel. See Appendix B, sections B-19 and B-20.c for more information.

Micron - One-millionth of a meter.

Milligauss (mG) - A gauss is the unit of magnetic flux density equal to one maxwell per square centimeter. Milligauss is one-thousandth of a gauss.

Municipal Solid Waste (MSW) - Locally-collected garbage, which can be burned (with or without prior processing) to produce energy in a waste-to-energy facility. See Appendix B, section B-10 for more information.

National Energy Policy Act (NEPA) - A Federal Act passed in 1969 requiring government agencies to consider environmental consequences when making policy decisions. Requires that a detailed statement of environmental impacts of, and alternatives to, a project be submitted to the federal government before the project can considered.

Natural Gas - A combustible gaseous mixture of simple hydrocarbons, primarily methane. See Appendix B, sections B-18 and B-23 for information on natural gas production and distribution, respectively. Natural gas is used for commercial and residential heating and cooking needs, as well as for electricity generation (see Appendix B, section B-11) and as an alternative fuel for vehicles (see Appendix B, section B-20.d).

New Source Review (NSR) - A program used in permitting new or modified industrial facilities which are in a non-attainment area, and which emit non-attainment criteria air pollutants. The two major requirements of NSR are BACT and emission offsets.

Nickel Metal Hydride Battery - Composed of nontoxic, completely recyclable materials, nickel-metal hydride batteries may provide double the range and twice the life cycle of current battery technology. The battery is composed of nickel hydroxide and a multicomponent, engineered hydride alloy consisting of vanadium, titanium, zirconium, nickel, and other metals in minor quantities.

Nitrogen Oxide (NO_X) - One of the exhaust emissions of an internal combustion engine. NO_x is produced by the combination of nitrogen and oxygen due to the high temperatures in the internal combustion process. NO_X emissions are regulated by Federal law.

Nuclear Power Plant - A thermal power plant using nuclear fission. Fission is the process of splitting the nuclei of atoms, which releases stored energy (in the form of heat) from within those atoms. See Appendix B, section B-12 for more information.

Ocean Wave Energy - Energy produced by ocean waves, which are caused primarily by the interaction of winds with the ocean surface. Such energy may be captured by energy conversion devices that typically use either pneumatic, hydraulic, or hydropower technologies. See Appendix B, section B-13 for more information.

Ozone - Tropospheric ozone (smog) is formed when volatile organic compounds (VOCs), oxygen and NO_x react in the presence of sunlight (not to be confused with stratospheric ozone, which is found in the upper atmosphere and protects the earth from the sun's ultraviolet rays). Though beneficial in the upper atmosphere, at ground level, ozone is a respiratory irritant and considered a pollutant.

Particulate Matter (PM) - Unburned fuel particles that form smoke or soot and can stick to lung tissue when inhaled. A NAAQS pollutant.

PM10 - Particulate matter less than 10 microns in diameter, consisting of incomplete combustion by-products, salt and larger organic compounds, condensed gases, mists, fugitive dust, sea salts, and pollens. These particles are of interest since they are more readily suspended in the air, stay airborne longer, and can be inhaled more deeply into lungs than the particles greater than 10 microns in diameter.

Peaking Unit - An electric generating facility that operates only to meet the maximum (peak) electricity demand, or to fill emergency requirements. Peaking units are designed to generate electricity on short notice, and for relatively short periods of time. Examples of facilities that operate as peaking units include: *gas turbines, hydroelectric power,* and *pumped hydroelectric storage.* They typically operate for less than 1,300 hours a year.

Photovoltaic - See *Solar Photovoltaic.*

Power - The rate at which work is done, or the rate at which energy is consumed. Power is measured in units such as Watts, kilowatts, megawatts, and horsepower. For example, a 100-Watt light bulb has a power requirement of 100 Watts. The *energy* required to operate that light bulb for 5 hours is the product of its power requirement and the length of time, or 500 Watt-hours in this example. Note that 500 Watt-hours is also the amount of energy consumed by a 50-Watt bulb operating for 10 hours. In both cases, the *energy* requirements are identical, but the *power* requirements are different. See also *Energy.*

Prevention of Significant Deterioration (PSD) - A program used in permitting new or modified industrial facilities in an area already in attainment. The intent is to prevent an attainment area from becoming a non-attainment area. This program can require best available control technology (BACT) and, if an ambient air quality standard is projected to be exceeded, emission offsets.

Public Utility Holding Company Act (PUHCA) - Federal legislation enacted in 1935 to control the financial practices of public utility holding companies and to simplify the holding company structure.

Public Utility Regulatory Policies Act (PURPA) - Enacted in 1978, PURPA is implemented by the Federal Energy Regulatory Commission and the California Public Utilities Commission (CPUC). Under PURPA, each electric utility is required to offer to purchase available electric energy from cogeneration and small power production facilities. See also *Qualifying Facility.*

Pumped Hydroelectric Storage - An energy storage technology in which water from a lower-elevation reservoir is pumped to a higher-elevation reservoir during low demand periods, consuming off-peak electricity. During high demand periods, electricity is generated by releasing the pumped water from the higher-elevation reservoir and allowing it to flow downhill through the hydraulic turbine(s) connected to electrical generators. See Appendix B, section B-8 for more information.

Qualifying Facility (QF) - A cogenerator or small power producer that meets certain guidelines, and thereby qualifies to supply generating capacity and electric energy to electric utilities, which must purchase this power at a price approved by state regulatory bodies. See also *Avoided Cost* and *Public Utility Regulatory Policies Act.*

Range - The distance that an EV can travel on a charge. A common protocol for determining range has not been determined, which makes comparisons among electric vehicles difficult. The United States Advanced Battery Consortium (USABC) recommends the Federal Urban Driving Schedule.

Reactive Material - A chemical with high activity that may react with other materials in a violent and uncontrollable manner if accidentally mixed.

Real time pricing - Real-time pricing involves pricing electricity on an hourly (or other time period) basis, based on the hourly cost of generating and delivering it. Hourly price information is passed on to the consumer who can decide, based on the price and his/her energy needs, what amount of electricity to buy now, and what amount to defer until later, when the cost may be lower.

Refinery (oil) - An industrial facility that converts crude oil into petroleum products that include: liquified petroleum gas, gasoline, aviation fuel, distillates such as diesel and No. 2 fuel oil, heavy residual fuel oils, lube oil, asphalt, and wax. See Appendix B, sections B-23 and B-24 for more information on petroleum and petroleum product pipelines, and refineries, respectively.

Regenerative Braking - Means of recharging the batteries by using energy created by braking the vehicle. With normal friction brakes, a certain amount of energy is lost in the form of heat created by friction from braking. With regenerative braking, the motors act as generators. They reduce the energy lost by feeding it back into the batteries resulting in improved range.

Renewable Resource - Resources that constantly renew themselves or that are regarded as practically inexhaustible. These include solar, wind, geothermal, hydro and wood. Although particular geothermal formations can be depleted, the natural heat in the earth is a virtually inexhaustible reserve of potential energy. Renewable resources also include some experimental or less-developed sources such as tidal power, sea currents and ocean thermal gradients.

Repowering - The upgrading of older generating technology by replacing older units with more efficient units, or by converting older systems into more efficient systems. An example of repowering is the replacement of an existing conventional natural gas-fired steam boiler with one or more combustion turbines and heat recovery steam generators (while retaining the existing steam turbine-generator), thereby forming a combined-cycle power plant. See Appendix B, section B-11 and Appendix H for more information.

Retail Wheeling - Retail wheeling involves a retail customer of a utility obtaining transmission (wheeling) service from that utility while purchasing the power from a different supplier. An example of retail wheeling is an industrial customer in one utility's service area buying power from another utility or third-party power producer, and using the first utility's transmission and distribution system to delivery the power.

Risk Management Prevention Plan (RMPP) - A plan to reduce the risk of accidents involving the use and handling of acutely hazardous materials. See also *Business Plan (Hazardous Materials)*.

Selective Catalytic Reduction (SCR) - An air pollution control technology used to reduce nitrogen oxides in fossil-fuel combustion flue gases. The nitrogen oxides are converted to nitrogen and water by injecting ammonia in the presence of metal catalysts (typically titanium and vanadium oxides).

Selective Non-Catalytic Reduction (SNCR) - An air pollution control technology used to reduce nitrogen oxides in fossil-fuel combustion flue gases. The nitrogen oxides are converted to nitrogen and water by injecting ammonia or urea into the flue gas.

Self-generator - A privately-owned generating facility that produces power primarily for the exclusive internal use of the private, non-utility owner.

Sensitive Receptors - Land uses that contain segments of the population who are more sensitive to certain environmental impacts (such as air quality, public health, and noise) than the general population. Depending on the specific impact being considered, sensitive receptors may include: day care centers, schools, hospitals, senior centers, nursing homes, libraries, and places of worship.

Smart Charging - The use of computerized charging stations which constantly monitor the battery so that charging is at the optimum rate and temperature is monitored to prolong battery life.

Smog - A combination of smoke, ozone, hydrocarbons, nitrogen oxides, and other chemically-reactive compounds which, under certain conditions of weather and sunlight, may result in a murky brown haze that causes adverse health effects. The primary source of smog in California is motor vehicles.

Solar Photovoltaic (PV) Cells - Solar cells that convert the sun's electromagnetic energy (not its heat) directly into electrical power. PV cells are semiconductor devices that produce direct current (dc) electricity. See Appendix B, section B-14 for more information.

Solar Thermal - Use of the sun's heat to create electricity via either concentrating methods (which concentrate sunlight on a relatively small area to create the high temperatures needed to vaporize water or other fluids to drive a turbine-generator) or salt ponds. See Appendix B, section B-15 for more information.

Substation - A facility that switches, changes, or regulates the voltage in the electric transmission and distribution system. Voltage is stepped up where power is sent from a generating facility to high-voltage transmission lines. Voltage is stepped down from high-voltage transmission lines to lower-voltage distribution lines. See Appendix B, section B-17 for more information.

Terminal Facility - A facility that receives petroleum or petroleum products by tanker, barge, pipeline, rail, or truck. See Appendix B, section B-25 for more information.

Thermal power plant - An electric generating facility that produces electricity from a thermal energy source. Examples include *coal, geothermal, natural gas, nuclear, solar, biomass, municipal solid waste,* and *landfill gas power plants.*

Threshold - A level triggering an effect or action.

Time-of-use Rates - Electricity rates that vary by time of day. Employing time-of-use rates can result in a reduction in peak electricity usage by giving consumers an incentive to move usages that are not time-critical to off-peak (lower price) periods. For example, a consumer may choose to operate his or her clothes washer at night when rates are cheaper than during the peak afternoon period.

Total Suspended Particles - Particles suspended in air, generally less than 100 microns in diameter, consisting of incomplete combustion by-products, salt and larger organic compounds, condensed gases, mists, fugitive dust, sea salts, and pollens.

Toxic - Poisonous or otherwise hazardous to human health.

U.S. Department of Energy (DOE) - A department of the Federal government established in 1977 to consolidate energy-oriented programs and agencies. The DOE mission includes the coordination and management of energy conservation, supply, information dissemination, regulation, research, development and demonstration. The Department includes the Office of Transportation Technologies, the umbrella of the Office of Alternative Fuels and others.

U.S. Department of Transportation (DOT) - A department of the Federal government established in 1967 that is responsible for transportation safety improvements and enforcement, international transportation agreements and the continuity of transportation services in the public interest. The department facilitates and coordinates various research, development and technology transfer activities to promote and advance technology innovation in the transportation sector.

U.S. Environmental Protection Agency (EPA) - A government agency, established in 1970, responsible for the protection of the environment and public health. EPA seeks to reduce air, water, and land pollution and pollution from solid waste, radiation, pesticides, and toxic substances. EPA also controls emissions from motor vehicles, fuels and fuel additives.

Vapor-Dominated Resources - Geothermal resources that are composed primarily of hot steam. See Appendix B, section B-7 for more information.

Volatile Material - A material which is easily vaporized, readily evaporating into air at typical ambient temperatures.

Volt - Unit of measurement expressing electromotive force. Watts divided by volts equals amps.

Waste-to-energy - The process of converting a waste material to usable energy (including electricity). Examples include: *anaerobic digestion, biomass, and municipal solid waste.*

Watt - The unit of electrical power.

Wholesale Wheeling - A procedure in which a transmission system owner provides transmission services to allow electricity transactions to occur between a third-party supplier and a wholesale buyer.

Wind Power - Electric power generated by wind-driven turbines. See Appendix B, section B-16 for more information.

Zero Emission Vehicle (ZEV) - Emits no exhaust emissions. Electric vehicles are the only practical vehicles that produce no emissions.

INFORMATION RESOURCES

Resource: An Encyclopedia of Energy Utility Terms, Pacific Gas & Electric Company, 2nd edition, 1992.

Energy Glossary and Guide to Programs, Agencies, and Legislative Committees, California Energy Commission Publication No. P180-91-002.

Air Pollution Glossary, California Air Resources Board, March 1993.

"Distributed Technologies Improve Utility Asset Use", *Electric Light & Power*, March 1994.

Electric Vehicle Glossary of Terms, Electric Transportation Coalition, 701 Pennsylvania Avenue, N.W., Washington, D.C. January 1996, 20004, (202)508-5995.

NOTES NOTES NOTES

ENERGY AWARE
PLANNING GUIDE: *ENERGY FACILITIES*

APPENDIX H: ORDER FORM
FIRST ENERGY-AWARE GUIDE

California is at a crossroads in the challenge to boost our state and local economies while handling the congestion and pollution resulting from our ever-increasing population. The California Energy Commission in 1993 published its first *Energy-Aware Planning Guide* which addresses energy conservation associated with typical planning issues confronted every day by local jurisdictions.

The *Energy-Aware Planning Guide* offers more than 40 different energy-conserving policy ideas and 270 implementation ideas for improving land use, transportation, building, water and waste management. For each idea, economic and environmental concerns of implementation are addressed. Over 115 local government projects are showcased as "how-to" examples of effective energy conservation programs. For each example, the name, address and phone number of the local government contact is provided!

- 330 PAGES
- LOOSE LEAF FORMAT *for* FUTURE INSERTS

Please send the *Energy-Aware Planning Guide* to:

Name _____

Organization _____

Address _____

City/Zip _____

Telephone ( ) _____

Pub. Number	Title	Quantity	Unit Price	Total Enclosed
P700-93-001	*Energy-Aware Planning Guide*	_____	$19.00	$_____

MAIL TO: California Energy Commission
Attn: Publications MS-13
1516 Ninth Street
P.O. Box 944295
Sacramento, CA 94244-2950

- Please enclose a self-addressed mailing label and allow 4-6 weeks for delivery.
- Check or money order payable to the California Energy Commission must accompany order.
- Prices subject to change without prior notice.

ENERGY AWARE

PLANNING GUIDE: *ENERGY FACILITIES*

This document is printed on recycled paper

Systems Assessment and Facilities Siting Division

General Information

Commission Homepage

Systems Assessment and Facilities Siting Division

More About the Division

Contacts and Phone Numbers

Electricity Statistics

Siting Division Reports & Publications

Proceedings

Petroleum Constraints -- (Docket # 04-SIT-1)

Siting Rulemaking -- (Docket # 04-SIT-2)

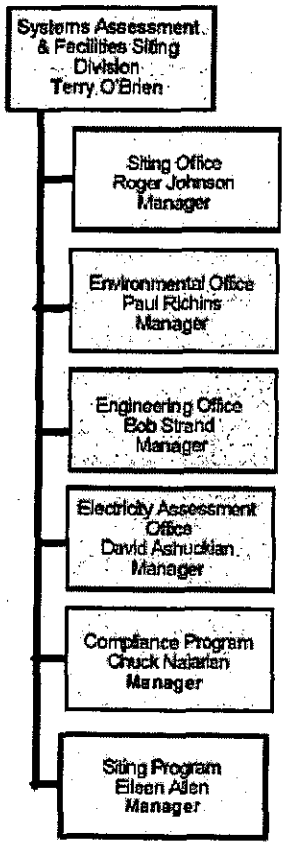
Compliance

Pre 1999

1999 To Date - See Individual Project's Page

Prior to 1975, industrial users and utilities were required to go through a multi-year process to obtain permits from numerous federal, state and local agencies before constructing new power facilities. The Legislature revised this process in 1975 and established a comprehensive siting process for new energy facilities at the California Energy Commission. The Legislature gave the Commission the statutory authority to license thermal power plants of 50 megawatts or greater and related transmission lines, fuel supply lines, and related facilities.

The purpose of the **Systems Assessment and Facilities Siting Division** is to ensure that needed energy facilities are authorized according to this process in an expeditious, safe and environmentally acceptable manner. In addition, the division prepares all environmental documentation for the Commission as required by the California Environmental Quality Act (CEQA). To attain its objectives, the division maintains a staff of experts in more than 20 environmental and engineering disciplines. The division's range of technical expertise allows it to perform balanced, totally independent evaluations of complex and controversial projects.



Peaker Projects

Power Plant Development & Licensing

Main Licensing Page

Database of California Power Plants

Developer's Guides

Energy Facility Maps

Environmental Justice

Environmental Programs

Fees for Generation Facilities Siting

PLACES -- (PLAnning for Community Energy, Economic and Environmental Sustainability)

With a reorganization of the Energy Commission in 2001, the Electricity Office (which formally was part of the old Energy Information and Analysis Division) was moved to the Systems Assessment and Facilities Siting Division. The division is organized into six offices and one unit:

- Compliance Program
- Electricity Assessment Office
- Engineering Office
- Environmental Office
- Natural Gas and Special Reports (Projects) Office
- Siting Program
- Docket Unit

Special Siting Division Meetings and Workshops

Note: Meetings for specific power plants licensing cases are located on that specific plants webpage. Go to: www.energy.ca.gov/sitingcases/all_projects.html for a list of current projects before the Commission.

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Letter From Bob Therkelsen on Siting Program

Letter from Energy Commission Executive Director Bob Therkelsen to Mr. Matt Tennis, Legislative Director Associated Builders and Contractors of California, regarding participation of the California Unions for Reliable Energy (CURE) in the California Energy Commission's power plant siting process. (Acrobat PDF file, 9 pages, 90 kilobytes)

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Developer's Guides

California Energy Commission Staff Cooling Water Management Program Guidelines for Wet and Hybrid Cooling Towers at Power Plants - Draft Guidelines, publication # CEC-700-2005-025. (Acrobat PDF file, 10 pages, 199 kilobytes)

ENERGY FACILITY LICENSING PROCESS: Water Supply Information
Staff Report / **Draft**, December 11, 2000. (Adobe Acrobat PDF file, 6 pages, 30 kilobytes)

ENERGY FACILITY LICENSING PROCESS: Developers Guide of Practices and Procedures
Staff Report / **Draft**, December 7, 2000. (Adobe Acrobat PDF file, 70 pages, 195 kilobytes)

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Environmental Programs

Impacts of Wind Energy on Avian Mortality

Avian Mortality Report

Avian Collision and Electrocution: An Annotated Bibliography (Report)

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Reports, Brochures and Fact Sheets

Fact Sheet - Summary of Power Plant Projects, 1998-2005 (PDF file, 2 pages, 14 kilobytes)

Most Siting Division reports are listed on the Siting Publications page.

Electricity Office reports prior to 2002 are listed on the Electricity Publications page.

Other Reports

State Auditor's Report on Energy Commission Siting Process (Placed on line: August 24, 2001, Adobe Acrobat PDF file, 46 pages, 543 kilobytes)

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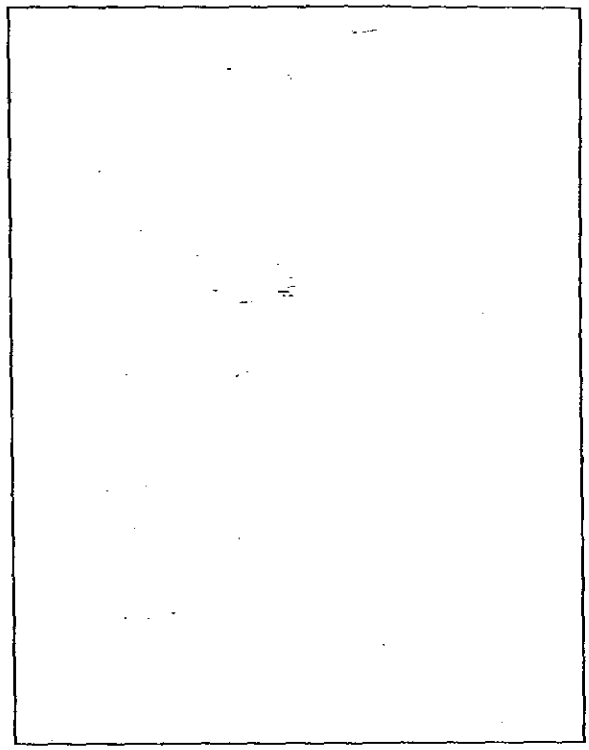
CALIFORNIA
ENERGY
COMMISSION

RULES OF PRACTICE AND PROCEDURE & POWER PLANT SITE CERTIFICATION REGULATIONS

SITING REGULATIONS

AUGUST 2000
P800-00-006

Gray Davis, *Governor*



CALIFORNIA ENERGY COMMISSION

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Chairman

Commissioners:
Michal C. Moore, Ph.D.
Robert A. Laurie
Robert Pernell
Arthur H. Rosenfeld

Steve Larson
Executive Director

William M. Chamberlain,
Chief Counsel
OFFICE OF CHIEF COUNSEL

Mary D. Nichols,
Secretary for Resources

TITLE 20. ENERGY COMMISSION

DIVISION 2. STATE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

CHAPTER 1. GENERAL PROVISIONS

Article 1. Construction of Regulations

CHAPTER 2. RULES OF PRACTICE AND PROCEDURE

Article 1. Commission Meetings

Article 2. General Provisions

Article 3. Rulemaking and Informational Hearings

Article 4. Complaints and Investigations

DIVISION 2. ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

CHAPTER 5. SITE CERTIFICATION

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A. Scope and Definitions

B. Filing and Information Requirements for Notices and Applications

C. Public and Agency Rights and Responsibilities Provisions Applicable to Notices and Applications

Article 2. Procedures for Considering Notices of Intention to File an Application for Certification

Article 3. Procedures for Considering Applications for Certification

Article 4. Additional Provisions Applicable to Geothermal Notices and Applications

A. General Provisions

B. Delegation of Geothermal Power Plant Siting Authority to Local Government

Article 5. Small Power Plant Exemptions

Article 6. Powerplant and Transmission Line Jurisdictional Investigations

A. Definitions

B. Expedited Clearance Process

CHAPTER 6. ENVIRONMENTAL PROTECTION

Article 1. Implementation of the California Environmental Quality Act of 1970

CHAPTER 7. ADMINISTRATION

Article 2. Disclosure of Commission Records

Article 3. Role of Public Adviser

CHAPTER 1. GENERAL PROVISIONS

Article 1. Construction of Regulations

/ 1001. Interpretation.

The regulations in this chapter supplement the Warren-Alquist State Energy Resources Conservation and Development Act (Division 15 of the Public Resources Code).

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25213, Public Resources Code.

/ 1002. Service on the Commission.

Service of process may be made on the commission by personal service on the chairman, the executive director, or general counsel, or as otherwise provided by law addressed as follows:

Energy Resources Conservation
and Development Commission
1516 Ninth Street
Sacramento, CA 95814
Attn: General Counsel

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25218(c), Public Resources Code.

/ 1003. Computation of Time.

The time in which any act provided by these regulations is to be done is computed by excluding the first day and including the last, unless the last day is a Sunday or holiday as defined in Sections 10 and 12 of the Code of Civil Procedure and then such day is also excluded.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Sections 10 and 12, Code of Civil Procedure.

CHAPTER 2. RULES OF PRACTICE AND PROCEDURE

Article 1. Commission Meetings

/ 1101. Scope.

This article only applies to meetings conducted under Public Resources Code Section 25214.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1102. Meetings--Scheduling.

(a) The commission shall meet at least once every month.

(b) The time and place of meetings may be set by resolution of the commission, by written petition of a majority of the members, or by written call of the chairman. The chairman may, for good cause, change the starting time or place, reschedule, or cancel any meeting.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1103. Notice and Agenda.

(a) Time and Distribution. Notices shall be given to all members, ex officio members, the public adviser, to all parties to proceedings on the agenda, and to all persons who request in writing such notice.

(b) Agenda. The agenda shall be prepared by the executive director and shall include any item proposed by any member, the public adviser or the executive director.

(c) Emergencies. In all public emergency cases, every member and ex officio member and the public adviser shall be notified in person, by telephone, or by telegram.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Sections 25214 and 25217(a), Public Resources Code; and Section 11125, Government Code.

/ 1104. Meetings.

(a) Presiding Member. The chairman shall preside over all meetings of the commission at which he is present. In his or her absence, the vice chairman shall preside. If neither the chairman nor the vice chairman is in attendance, the member present who has the greatest seniority on the Commission shall preside. The presiding member may yield the chair.

(b) Robert's Rules of Order. Except as otherwise provided by this article and except when all the members present indicate otherwise, meetings of the commission shall be conducted pursuant to the latest edition of Robert's Rules of Order. Failure to comply with this subsection shall not invalidate any action of the commission.

(c) Order of Agenda. The presiding member may determine the order in which agenda items shall be considered.

(d) Consent Calendar. The agenda may include an item designated "the consent calendar."

(1) The consent calendar shall include only those matters for which there appears to be no controversy. The consent calendar shall contain any such matter specified for inclusion by the person proposing the agenda item. A brief description of each matter on the consent calendar shall be included in the agenda.

(2) At the request of any member, any matter shall be removed from the consent calendar and may be considered at the same meeting as a separate item of business.

(3) After an opportunity for the requests to remove matters from the consent calendar has been given, a vote shall be taken on the consent calendar. If three members vote to approve the consent calendar, each matter on the consent calendar shall be approved and shall have the same force and effect as it would have if approved as a separate agenda item.

(e) Public Comments. Any person may submit comments in writing on any agenda item. Any person submitting such comments shall, if possible, provide the commission with either twelve paper copies of such comments, or one paper copy and electronic copies in the number, media and format specified in Section 1209.5 in advance of the meeting at which it is to be considered.

Any person present and so desiring shall be given an opportunity to make oral comments on any agenda item; provided
however, that the presiding members may limit or preclude such comments as necessary for the orderly conduct of business.

NOTE: Authority cited: Section 25218, Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1105. Permanent Record.

(a) The commission shall keep minutes of its meetings. Minutes shall be approved by the full commission and, upon approval, shall be signed by the chairman or other person designated by the chairman. Signed minutes shall be the original evidence of actions taken at any meeting, including the text of any resolutions adopted.

(b) Commission public meetings shall be recorded by stenographic reporter or electronic recording or both. The transcripts or recordings shall be kept at least one year and shall be available to the public for review at the commission's main office and such other offices as the commission may designate.

(c) Any person may photograph or record any public meeting of the commission so long as it does not disrupt the orderly conduct of business.

(d) Any person may petition the commission to correct a transcript of his own statements. Such petition shall be made within sixty days after the transcript has been made available to the public at the commission's main office. The commission shall consider any such petition as an item on the consent calendar pursuant to Section 1104(c) of these regulations.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25214, Public Resources Code.

Article 2. General Provisions

/ 1200. Scope.

Except as otherwise specifically indicated, the provisions of this article shall apply to all proceedings and hearings held before the commission or a committee thereof.

NOTE: Authority cited: Section 25218(e) and 25218(f), Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1201. Definitions.

The following definitions shall apply unless otherwise indicated:

(a) "Staff" means the staff of the State Energy Resources Conservation and Development Commission.

(b) "Respondent" means any person named in a complaint, pursuant to Section 1231 of these regulations, and alleged to be in violation of any regulation, order, decision, or statute adopted, administered, or enforced by the commission, and any person who is the subject of a complaint proceeding pursuant to Sections 1230 and 1231 of these regulations.

(c) "Complainant" means any person who files a complaint, pursuant to section 1231 of these regulations, alleging the violation of any regulation, order, decision, or statute adopted, administered, or enforced by the commission.

(d) "Intervenor" means any person who has been granted leave to intervene pursuant to these regulations.

(e) "Party" means any applicant, respondent, complainant, or intervenor, and the staff of the commission.

(f) "Presiding member" means the chairman of the commission or any member of the commission designated to preside over any proceeding pursuant to Section 1204 of these regulations.

(g) "Comment" means any oral or written statement made by any person, not under oath, in any proceeding before the commission.

(h) "Testimony" means any oral or written statement made by any person, under oath in any proceeding before the commission.

(i) "Witness" means any person who offers testimony in any proceeding before the commission.

(j) "Docket Unit" means the Docket Unit of the State Energy Resources Conservation and Development Commission.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1202. Right of Any Person to Comment.

(a) Any person present and so desiring shall be given an opportunity to make oral comments on the subject matter of a proceeding; provided, however, that the presiding member may limit such comments as necessary for the orderly conduct of business. Except as otherwise provided, persons desiring to make oral comments are encouraged to notify the presiding member or the public adviser at least two (2) days prior to the hearing at which such comments are to be made.

(b) Any person desiring to submit written comments to the commission concerning the subject matter of a proceeding shall submit copies of such comments pursuant to Section 1209 of these regulations. Persons are encouraged to submit such comments at least five (5) days prior to the hearing, unless otherwise provided by order. Written comments shall be filed with the Docket Unit of the Energy Resources Conservation and Development Commission; provided, however, that during the actual conduct of a hearing, written comments may be filed with the presiding member.

COMMENT: The right to comment is not the limit of public participation in commission proceedings. For example, Section 1226 of these regulations provides the opportunity for persons to submit sworn testimony on specified issues in rulemaking and informational hearings, while Section 1227 provides a mechanism whereby persons interested in a proceeding may be permitted to ask or answer additional questions either orally or in writing. In addition, in those proceedings

requiring greater formality, and in all adjudicatory proceedings, the commission permits intervention in the proceeding.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1203. Powers of the Chairman.

In addition to all other powers conferred by this article, the chairman or presiding member designated pursuant to Section 1204 shall have the power to:

(a) Request and secure such information as is relevant and necessary in carrying out the purposes of the proceeding.

(b) Issue subpoenas and subpoenas duces tecum at the direction of the commission, on his motion or upon application of any party. The application of a party shall be supported by a declaration of good cause.

(c) Regulate the conduct of the proceedings and hearings, including, but not limited to, disposing of procedural requests, admitting or excluding evidence, receiving exhibits, designating the order of appearance of persons making oral comments or testimony, and continuing the hearings.

(d) Set the time and place of hearings.

(e) Cancel a scheduled hearing or meeting. To the extent feasible, notice shall be given of any cancellation and the staff in consultation with the public adviser shall inform known interested participants by the most expeditious means possible.

(f) For good cause shown, and upon proper notice, shorten or lengthen the time required for compliance with any provision of these regulations.

NOTE: Authority cited: Section 25213 and 25539, Public Resources Code. Reference: Section 25210, Public Resources Code.

/ 1204. Designation of Committees and Presiding Member; Quorum.

(a) Committees shall be designated in accordance with Public Resources Section 25211. During committee proceedings a presiding member shall exercise the powers and duties conferred on the chairman by this article.

(b) A quorum of a committee is one member.

(c) The commission may at any time withdraw any matter from a committee to allow consideration of the matter by the full commission.

(d) If a presiding member is unavailable during any portion of the proceedings, he may delegate his responsibilities to the second member of the committee.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25211, Public Resources Code.

/ 1205. Designation of Hearing Officer; Responsibilities.

The chairman may designate a hearing officer to assist a committee in the conduct of any proceeding held pursuant to this Division.

The Commission may authorize a hearing officer to preside over proceedings held pursuant to this Division, except for site certification proceedings pursuant to Chapter 5, Articles 1 through 5 of these regulations, Biennial Report proceedings, and rulemaking proceedings. In site certification proceedings pursuant to Chapter 5, Articles 1 through 5, of these regulations, a hearing officer may take evidence in the temporary absence of a Commission member as provided in Public Resources Code section 25211.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Sections 25211 and 25217, Public Resources Code.

/ 1206. Representatives.

Any person may designate any other person, except those prohibited by Section 25205(d), Public Resources Code, to represent him or her for any purpose under this subchapter.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25205(d), Public Resources Code.

/ 1207. Intervenors.

(a) Any person may file with the Docket Unit or the presiding committee member a petition to intervene in any proceeding. The petition shall set forth the grounds for the intervention, the position and interest of the petitioner in the proceeding, the extent to which the petitioner desires to participate in the proceedings, and the name, address, and telephone number of the petitioner.

(b) In a power plant siting case, the petition shall be filed at least 30 days prior to the first hearing held pursuant to sections 1725, 1748, or 1944 of this Chapter, subject to the exception in subsection (c) below. The petitioner shall also serve the petition upon the Applicant.

(c) The presiding member may grant leave to intervene to any petitioner to the extent he deems reasonable and relevant, and may grant a petition to intervene filed after the deadline provided in subdivision (b) only upon a showing of good cause by the petitioner.

(d) Any petitioner who has been denied leave to intervene by the presiding member may appeal the decision to the full commission within fifteen (15) days of the denial. Failure to file a timely appeal will result in the presiding member's denial becoming the final action on the matter.

(e) Any petitioner may withdraw from any proceeding by filing a notice to such effect with the Docket Unit or presiding committee member.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1208. Conferences; Purpose; Notice; Order.

The presiding member or hearing officer may hold a conference with the parties, the public adviser, the general counsel, and any other persons interested in the proceeding, at any time he deems necessary, for the purpose of formulating the issues, organizing the questioning of witnesses, determining the number of witnesses, providing for the exchange of exhibits or prepared statements, and such other matters as may expedite the orderly conduct of the proceedings. The public adviser may, upon request, present the views submitted by persons interested in the proceeding who are unable to attend.

(a) The conference shall be publicly noticed and the notice served in person or by mail on all parties at least ten (10) days before the conference.

(b) The presiding member may enter an order which specifies issues or states any other matter to aid in the orderly conduct of the hearing, and may, upon agreement of all the parties, accept stipulations of law or fact.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1209. Form of Submission.

(a) Except for drawings, photographs, maps, diagrams, charts, graphs, or similar documents and exhibits, all formal paper filings and accompanying materials submitted to the commission pursuant to these regulations shall be typewritten or printed on paper eight and one-half (8_) inches wide and eleven (11) inches long. To the extent possible, all attachments thereto, including drawings, photographs, maps, diagrams, charts, graphs, and similar documents, and all other exhibits, shall be folded to the same size. To the extent possible, no document should be larger than eleven (11) inches wide and seventeen (17) inches long unfolded. Documents should be printed on both sides of the page. Clear, permanently legible copies made by any reproduction process may be submitted. Pages shall be bound securely and shall be consecutively numbered. Formal filings may also be submitted electronically. Electronic copies shall be in the number, media, and format specified in Section 1209.5.

(b) All filings and accompanying materials, including exhibits not attached to other materials, shall show the following on the title page or cover:

(1) the title of the proceeding before the commission;

(2) the docket number, if any, assigned by the commission;

(3) the nature of the material;

(4) the name, address, and telephone number of the person submitting the material.

(c) Unless otherwise specified in these regulations or required by the commission or the executive director, any person submitting written materials in connection with a proceeding before the commission shall provide twelve (12) paper copies thereof, including one original paper copy, unless provision of twelve (12) copies would impose an undue burden on the submitter. If the undue burden is one of inconvenience, a check covering the cost of making additional copies at the current rate per page specified by the commission s Docket Unit shall be submitted with the original copy. If the undue burden is financial, the letter of transmittal, written material, or comment should so state. The Docket Unit shall photocopy and distribute submitted material in the normal course. Alternatively, a person may provide one original paper copy and electronic copies in the number, media and format specified in Section 1209.5.

(d) Unless otherwise specified in these regulations all materials filed with the commission shall be filed with the Docket Unit. The executive director shall assure the proper distribution of such materials and shall assure that all materials submitted to the commission shall be made available at the Docket Unit to the public in accordance with provisions of the California Public Records Act, Chapter 3.5 (commencing with Section 6250) of Division 7, Title 1 of the Government Code, and commission regulations.

(e) Materials shall be deemed filed as of the date upon which such material is served upon the appropriate officer of the commission, or if mailed, as of the date upon which such material is deposited in the mail, first class postage prepaid.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25223, Public Resources Code.

/ 1209.5. Electronic filing.

(a) Electronic documents may be submitted in any of the following media in the number of copies specified:

(1) Two CD-ROMs (read only);

(2) Two magnetic diskettes;

(3) One internet e-mail;

(4) One posted to an FTP site; or

(5) Any other media and number of copies authorized by the Executive Director.

(b) The format version used must be noted on the media. Charts, graphs, drawings, maps, and photographs should be incorporated within the document, but may be included in an appendix. Maps and photographs may be submitted as paper copies in the number specified by the executive director.

(c) Electronic documents shall be provided in the Portable Document Format (PDF), or its equivalent, as determined by the executive director.

(1) The executive director may waive the format requirement if it is shown to constitute an undue burden on the submitter of a document. A written request for a waiver may be submitted to the executive director at any time prior to the filing of a document. The request shall include a description of each such document and a discussion of the reasons why the format specified in (c) above is an undue burden. The requesting party may not file the electronic document while such a request is pending. If a request is granted, the executive director shall specify the format allowed. The executive director shall act on all such requests within 15 days.

(d) Documents shall be delivered to the Dockets Unit in one of the following ways:

(1) by personal delivery to the Dockets Unit;

(2) by electronic transfer (e-mail) of smaller documents (5MB maximum file size) to: dockets@energy.state.ca.us;

(3) by first class mail, or other equivalent delivery service, with postage prepaid; or

(4) in any other delivery method approved by the Executive Director.

(e) Data the submitter considers confidential must be filed as a separate document with an application for confidential designation pursuant to Section 2505.

NOTE: Authority cited: Sections 25216.5(a), 25218(e), Public Resources Code. Reference: Section 25223, Public Resources Code.

/ 1210. Filing by Parties.

(a) Unless otherwise provided by the presiding member, a paper copy of all written material filed by any party in a proceeding shall be served in person or by first class mail, or other equivalent delivery service, with postage prepaid, on every other party to the proceeding, except where a party requests an electronic copy when available. Any party so requesting shall be served with an electronic copy in a manner pursuant to Section 1209.5 regarding electronic filings.

(b) The Docket Unit shall promulgate and make available a list which shall include the names and addresses of all parties to a proceeding.

(c) Any filing by a party shall include a proof of service in compliance with subsection (a) of this section.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25210, Public Resources Code.

/ 1211. Submission of Exhibits; Filing.

Any exhibits, including charts, graphs, maps, and other documents relevant to testimony or comments may be submitted to the presiding member at any hearing, or, subject to the discretion of the presiding member, filed with the Docket Unit at any time before the close of the proceeding.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25210, Public Resources Code.

/ 1212. Rules of Evidence.

The following rules of evidence shall apply to any adjudicatory proceeding of the commission and in such other proceedings as the commission may determine by order.

(a) The hearing need not be conducted according to technical rules relating to evidence and witnesses. Any relevant noncumulative evidence shall be admitted if it is the sort of evidence on which responsible persons are accustomed to rely in the conduct of serious affairs.

(b) Oral or written testimony offered by any party shall be under oath.

(c) Each party shall have the right to call and examine witnesses, to introduce exhibits, to cross-examine opposing witnesses on any matters relevant to the issues in the proceeding, and to rebut evidence against such party.

(d) Hearsay evidence may be used for the purpose of supplementing or explaining other evidence but shall not be sufficient in itself to support a finding unless it would be admissible over objections in civil actions.

The presiding member may establish such additional rules as necessary for the orderly conduct of the proceeding.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25210, Public Resources Code.

/ 1213. Official Notice.

During a proceeding the commission may take official notice of any generally accepted matter within the commission's field of competence, and of any fact which may be judicially noticed by the courts of this state. Parties to a proceeding shall be informed of the matters to be noticed, and those matters shall be noted in the record, or attached thereto. Any party shall be given a reasonable opportunity on request to refute the officially noticed matters by evidence or by written or oral presentation of authority.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25210, Public Resources Code.

/ 1214. Record and Transcript.

The presiding member shall cause a formal record of the proceedings to be made. The record shall consist of the official minutes or a transcript of each hearing or conference held during the proceedings, all pleadings, written testimony, and briefs submitted by any party, any order entered pursuant to Section 1208(b), all questions and answers of witnesses submitted pursuant to Section 1225, any exhibits accepted into the record pursuant to Section 1211, any written comments submitted pursuant to Section 1202(b), and the record of all ex parte contacts filed pursuant to Section 1216 of these regulations, together with such other items as the presiding member may direct. The presiding member may cause a transcript of any conference held pursuant to Section 1208 to be made and entered into the record.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25210, Public Resources Code.

/ 1215. Interlocutory Orders and Appeals.

(a) During proceedings before a committee, party may request that a ruling of the committee or presiding member be issued in the form of a written order. Any such request shall be made no later than five calendar days following the ruling.

(b) Any party may petition the full commission to review any order prepared pursuant to subsection (a) of this section. Any such petition shall be filed within ten days of the date of the order being issued; provided, however, that rulings of the presiding member or committee may not be appealed during the course of hearings or conferences except in extraordinary circumstances where prompt decision by the commission is necessary to prevent detriment to the public interest. In such instances, the matter shall be referred forthwith by the presiding member to the commission for determination.

(c) Unless the commission acts upon questions referred by the presiding member to the commission or upon a petition to review an order of the presiding member or committee within thirty (30) days after the referral or filing of the petition, whichever is later, such referrals or petitions shall be deemed to have been denied. The commission may act by formally denying the petition or by vacating or amending the committee order.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25210, Public Resources Code.

/ 1216. Ex Parte Contacts.

Commissioners and assigned hearing officer(s) shall avoid any oral or written communication with a representative of any party to any adjudicatory proceeding pending before the commission including those members of the commission staff who have been involved or are likely to be involved as principals in case management or who have participated or are likely to participate in the preparation or presentation of staff testimony, documentary evidence, or cross-examination concerning any substantive issue involved in the proceeding; provided, however, that communications contained in the formal record at a commission hearing shall not be prohibited.

(a) If such a communication occurs, the commissioners or hearing officer shall include a description of the substance of the discussion in the public file on the proceeding to permit rebuttal of the matter on the record by any party affected.

(b) All of the written communications received by a commissioner or hearing officer which relate to substantive issues raised in an adjudicatory proceeding before the commission shall be included in the public file on the proceeding and shall be subject to rebuttal on the record by any party affected.

(c) An adviser to a commissioner or any other member of a commissioner's own staff shall not be used in any manner that would circumvent the purposes and intent of this section.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25210, Public Resources Code.

Article 3. Rulemaking and Informational Hearings

/ 1220. Scope.

(a) "Rulemaking proceedings" shall include any hearings designed for the adoption, amendment, or repeal of any rule, regulation, or standard of general application, which implements, interprets or makes specific any provision of Division 15 of the Public Resources Code or any other statute enforced or administered by the commission.

(b) "Informational proceedings" shall include any hearings designed to gather and assess information to assist the commission in formulating policies; informing the public of commission actions; or obtaining public comment and opinion.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25210, Public Resources Code.

/ 1221. Petitions.

(a) Any person may petition the commission to request rulemaking hearings. Such petition shall include:

(1) the name, address, and telephone number of the petitioner;

(2) the substance or nature of the regulation, amendment, or repeal requested;

(3) the reasons for the request;

(4) reference to the authority of the commission to take the action requested.

(b) Such petition shall be filed with the executive director who shall within seven (7) days after its filing determine whether the petition contains the information specified in subsection (a).

(1) If the executive director determines that the petition is complete, he or she shall so certify in writing and shall inform the petitioner.

(2) If the executive director determines that the petition is not complete, it shall be returned to the petitioner accompanied by a statement of its defects. The petitioner may correct the petition and resubmit it at any time.

(c) Upon certification by the executive director, the commission shall, within thirty (30) days from the filing of the petition, deny the petition, stating the reason for the denial in writing, or grant the petition, directing the staff to prepare an appropriate order pursuant to section 1222 of these regulations.

(d) Nothing in this section shall operate to limit the opportunity of any member of the public to be heard at commission meetings and hearings, as provided by section 25214 of the Public Resources Code.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Sections 11347 and 11347.1, Government Code.

/ 1222. Commission Orders.

(a) The commission may, upon its own motion or upon granting a petition filed pursuant to section 1221 of these regulations, adopt an order to institute a rulemaking proceeding in accordance with the procedures of Sections 11346.4, 11346.5, 11346.7, and 11346.8 of the Government Code.

(b) The commission may, upon its own motion, adopt an order to institute an informational proceeding. The order shall include:

(1) the date of the first hearing;

(2) a statement indicating whether the commission or a committee thereof will hold additional hearings on the matter;

(3) a statement of the authority pursuant to which the hearing is ordered, and a reference to any code sections or other provisions of law pursuant to which the information is to be gathered or disseminated;

(4) a statement of the nature and purpose of the proceedings;

(5) a statement requiring the presence and participation of such persons as the commission may direct, consistent with the nature and purpose of the proceedings.

(c) In addition to the requirements of subsections (a) and (b) of this section, every order instituting hearings pursuant to this section shall contain:

(1) a statement informing members of the public of the function and availability of the public adviser;

(2) a statement indicating the time during which written comments will be received, and the manner by which such comments shall be filed;

(3) a statement that any person may make oral comments on the subject of the proceeding;

(4) a statement setting forth additional procedures deemed necessary by the commission and not inconsistent with these regulations. Such procedures may include one or more provisions contained in section 1212 of these regulations.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25210 and 25214, Public Resources Code.

/ 1223. Notice.

(a) Notice of a rulemaking proceeding shall be given in accordance with Government Code Section 11346.4.

(b) At least fourteen (14) days prior to the first hearing in an informational proceeding ordered pursuant to Section 1222(b), the executive director shall cause notice of the hearing to be mailed to every person who requested such notice in writing, to every person requested to participate in such proceedings, and to any person who the executive director, in conjunction with the public adviser, determines to be concerned with the subject matter of the proceeding.

(c) In addition to the requirements of subsections (a) and (b) of this section, notice of additional hearings shall be required at least ten (10) days prior to the commencement of such hearings.

(d) Nothing in this section shall preclude the commission from publishing notice in such additional forms or media as the executive director, in conjunction with the public adviser, may prescribe.

(e) A copy of the order adopted pursuant to Section 1222 of these regulations shall accompany the initial notice prepared and mailed pursuant to this section, unless a copy of the order has been previously mailed to those persons who would receive such notice.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25210, Public Resource Code.

/ 1224. Use of Testimony.

(a) The commission, or a committee thereof, may require by order instituting hearings, prehearing conference order, or other proper notice that evidence on specified issues of fact or matters of technical expertise be presented as sworn testimony. Such requirements shall not preclude unsworn oral or written comments from being offered in the proceeding.

(b) The presiding member may require that prepared written testimony or other evidence be submitted in advance of any hearing, for the purpose of facilitating the orderly consideration of issues at the hearing.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25211, Public Resources Code.

/ 1225. Questioning.

(a) Questions from commissioners or staff are in order at any time. At the close of an oral statement, the presiding member may allow other persons to question a witness or person presenting a statement; provided, however, that persons not submitting sworn testimony shall not be compelled to answer such additional questions without their consent.

(b) The presiding member may, at his discretion, limit the time and scope of oral questioning.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25214, Public Resources Code.

Article 4. Complaints and Investigations

/ 1230. Scope.

(a) Complaint proceedings shall include any adjudicatory proceeding in which the commission determines whether to sanction, or take other appropriate action against, a person for an alleged violation of any statute, order, decision, or regulation adopted, administered, or enforced by the commission, including but not limited to a proceeding pursuant to Public Resources Code section 25534.1. Investigation proceedings shall include any adjudicatory proceeding in which the commission determines the applicability of any statute, order, decision, or regulation adopted, administered, or enforced by the commission. A single proceeding may involve both a complaint and an investigation.

(b) Standing committees to exercise the complaint or investigatory functions of the commission may be established pursuant to Section 1204(a). The order establishing a committee shall designate the area of commission jurisdiction over which a committee shall exercise the complaint or investigatory function.

NOTE: Authority cited: Sections 25213, 25218(e), and 25539, Public Resources Code. Reference: Section 11180, Government Code; and Sections 25210, 25362(a), 25362(b), 25451, 25452, 25500, 25534, 25534.1, 25900, 25967, and 25983, Public Resources Code.

/ 1231. Complaints and Requests for Investigation; Filing.

Any person, including but not limited to the commission staff or the owner or operator of a powerplant or transmission line, may file a complaint alleging a violation of a statute, regulation, order, program, or decision adopted, administered, or enforced by the commission. Any person may also file a request for investigation, including a request for a jurisdictional determination regarding a proposed or existing site and related facilities.

(a) A complaint or request for investigation shall be filed with the General Counsel of the commission.

(b) The complaint or request for investigation shall include:

(1) the name, address, and telephone number of the person filing the complaint (complainant) or request for investigation (petitioner);

(2) the name, address, and telephone number of the person allegedly violating the statute, regulation, order, or decision (respondent) or, in the case of a request for a jurisdictional investigation, the name, address, and telephone number of the person owning or operating, or proposing to own or operate, the project which is the subject of the request for investigation (respondent);

(3) a statement of the facts upon which the complaint or request for investigation is based;

(4) a statement indicating the statute, regulation, order, or decision upon which the complaint or request for investigation is based;

(5) the action the complainant or petitioner desires the commission to take;

(6) the authority under which the commission may take the action requested; and

(7) a statement by the complainant or petitioner specifically listing the names and addresses of any other individuals, organizations, and businesses which the complainant or petitioner knows or has reason to believe would be affected by the relief sought.

(8) a declaration under penalty of perjury by the complainant or petitioner attesting to the truth and accuracy of any factual allegations contained in the complaint or request for investigation. If any of the applicants are corporations or business associations, the declaration shall be dated, signed, and attested to by an officer thereof. Where a declaration is filed on behalf of a joint venture or proposed joint venture, all members of the joint venture or proposed joint venture shall date, sign, and attest to the declaration.

NOTE: Authority cited: Sections 25213, 25218(e), and 25539, Public Resources Code. Reference: Section 11180, Government Code; Sections 25210, 25362(a), 25362(b), 25451, 25452, 25500, 25534, 25900, 25967, and 25983, Public Resources Code.

/ 1232. Hearing and Notice Procedures.

(a) Within 30 days after the receipt by the General Counsel of a complaint or request for investigation, the committee, or if none has been assigned, the chairman, shall:

(1) dismiss the matter upon a determination of insufficiency of the pleadings, specifying whether the dismissal is with or without prejudice; or

(2) serve the complaint or request for investigation upon the respondent and all other persons identified in Section 1231(b)(7) and schedule a hearing upon the complaint or request for investigation. The hearing shall be scheduled to commence within 90 days after the receipt by the General Counsel of the complaint or request for investigation. The hearing may be scheduled before the full commission, the committee, or a hearing officer assigned by the chairman at the request of the committee as provided in Section 1205.

(b) Notice, by certified mail, return receipt requested, of complaint or investigatory proceedings shall be given to all petitioners, respondents and persons identified in Section 1231(b)(7) no fewer than 21 days before the first hearing on the matter. In addition, the committee, or if none has been assigned the chairman, may take additional steps to notify other individuals, organizations, and businesses which the committee or the chairman has reason to believe would be adversely affected by a decision.

(c) The notice shall contain:

(1) the names and addresses of all named complainants, petitioners, and respondents;

(2) a statement concerning the nature of the complaint or request for investigation, with an identification of the statute, regulation, order, or decision at issue;

(3) an explanation of the action the commission may take;

(4) the date, place, and time of the first hearing in the matter; and

(5) a statement concerning the availability of the public adviser.

NOTE: Authority cited: Sections 25213, 25218(e), 25539, Public Resources Code. Reference: Section 11180, Government Code; Sections 25210, 25362(a), 25362(b), 25451, 25452, 25500, 25534, 25900, 25967 and 25983, Public Resources Code.

/ 1233. Answers to Complaints and Requests for Investigation

(a) The respondent shall file and serve an answer with the complainant or petitioner, the commission, and all persons identified in Section 1231(b)(7) or 1232(b) within 30 days after service of the complaint or request for investigation pursuant to Section 1232(a)(2).

(b) The answer shall include:

(1) an admission or denial of each material allegation;

(2) an explanation of any defenses raised by the respondent; and

(3) a declaration as provided in Section 1231(b)(8).

(c) Where the petitioner seeks clarification of the jurisdictional status of its own project, no answer shall be required.

NOTE: Authority cited: Sections 25213, 25218(e), and 25539, Public Resources Code. Reference: Section 11180, Government Code; Sections 25210, 25362(a), 25362(b), 25451, 25452, 25500, 25534, 25900, 25967, and 25983, Public Resources Code.

/ 1234. Proposed Decision.

(a) If the matter is heard before an assigned committee or hearing officer, appointed pursuant to Section 1205, the committee or hearing officer shall make its recommendation to the full commission in the form of a written proposed decision.

(b) To the extent reasonably possible, the proposed decision shall be made available within 14 days following the close of hearings held pursuant to Section 1232.

(c) The proposed decision shall contain an explanation and analysis of the facts and issues involved in the case, and recommendations for disposition by the full commission. The committee or hearing officer shall serve a copy of the proposed decision upon all parties to the hearings on the matter and shall schedule the matter for consideration by the full commission at the earliest reasonable date, but in no event sooner than 10 days after service of the proposed decision.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25210, Public Resources Code.

/ 1235. Public Participation and Intervention.

To the extent deemed relevant by the presiding member, any person may testify or comment during a complaint or investigatory hearing. A person may become a formal party by intervening pursuant to Section 1207.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1236. Commission Decision.

(a) Upon consideration of a proposed decision from a committee or hearing officer, the commission shall:

(1) adopt, modify, or reject the proposed decision; or

(2) remand the matter to the committee or hearing officer for further hearings; or

(3) reopen the evidentiary record and itself conduct further hearings.

(b) When considering a proposed decision from a committee or hearing officer, the commission may limit presentations by all participants to written and oral submissions based upon the existing evidentiary record.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25210, Public Resources Code.

CHAPTER 5. SITE CERTIFICATION

Article 1. General Provisions Applicable to Notices and Applications

A. Scope and Definitions

/ 1701. Scope of Regulations.

(a) Unless otherwise stated, the provisions of Article 1 of this chapter shall apply to the consideration of all notices and applications for any site and related facility within the jurisdiction of this commission.

(b) The provisions of Article 2 of this chapter shall apply to the consideration of all notices except as provided in Article 4.

(c) The provisions of Article 3 of this chapter shall apply to the consideration of all applications for certification except as provided in Article 4.

(d) The provisions of Article 4 of this chapter shall apply to the consideration of all geothermal notices and applications for certification.

(e) The provisions of Article 5 of this chapter shall apply to the consideration of all applications for a Small Power Plant Exemption.

(f) The provisions of Article 6 of this chapter shall apply to the consideration of all powerplant and transmission line jurisdictional determinations.

NOTE: Authority cited: Sections 25218(e) and 25541.5, Public Resources Code. Reference: Section 25541.5, Public Resources Code.

/ 1702. Definitions.

For purposes of this subchapter and unless otherwise indicated, definitions found in Public Resources Code Section 25100 et seq. as well as the following definitions shall apply:

(a) "Administrative record" means all materials that have been entered into the docket on the proceeding. The administrative record includes but is not limited to the hearing record (as defined below).

(b) "CEQA" means the California Environmental Quality Act of 1970 commencing with Section 21000 of the Public Resources Code.

(c) "Committee" means the committee of the commission appointed pursuant to Section 1204 of these regulations to conduct proceedings on a notice or application.

(d) "Environmental documents" means draft environmental impacts reports (draft EIR), final environmental impact reports (final EIR), initial studies, negative declarations, notices of preparation, notices of determination, notices of exemption and statements of findings and overriding considerations, and the documentation prepared by the Commission or its Staff for a certified regulatory program in compliance with Section 21080.5 of the Public Resources Code.

(e) "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

(f) "General counsel" means the general counsel of the commission.

(g) "Hearing officer" means any person designated pursuant to Section 1205 of these regulations to assist the presiding member in conducting the proceeding.

(h) "Hearing record" means the materials that the committee or commission accepts at a hearing. While the committee or commission may rely in part on any portion of the hearing record in making a finding, only those items properly incorporated into the hearing record pursuant to Section 1212 or 1213 are sufficient in and of themselves to support a finding. The hearing record includes:

(1) Written and oral testimony presented at a hearing, including direct and cross-examination of a witness.

(2) Supporting documentary evidence or exhibits submitted with testimony.

(3) Public comment offered at a hearing or entered into the record at a hearing.

(4) Public agency comment offered at a hearing or entered into the record of a hearing.

(5) Matters of which official notice has been taken.

(6) Other evidence that the committee accepts at a hearing.

(i) "Intervenor" means any person who has been granted leave to intervene in notice or application proceedings pursuant to Section 1712 of these regulations.

(j) "Party" means the applicant, the staff of the commission, and any intervenor.

(k) "Presiding member" means the presiding member of the committee appointed to conduct proceedings on a notice or application.

(l) "Filing" means submission of any document to the commission docket. A document is filed on the day it is received by the commission docket.

(m) "Acceptance" means a formal determination by the commission, pursuant to Public Resources Code, sections 25516.6, 25522, or 25540.1 that a notice or application for certification is complete.

(n) "Related Facility" means a thermal powerplant, electric transmission line, or any equipment, structure, or accessory dedicated to and essential to the operation of the thermal powerplant or electric transmission line. These facilities include, but are not limited to, transmission and fuel lines up to the first point of interconnection, water intake and discharge structures and equipment, access roads, storage sites, switchyards, and waste disposal sites. Exploratory, development, and production wells, resource conveyance lines, and other related equipment used in connection with a geothermal exploratory project or geothermal field development project, and absent unusual or compelling circumstances, the thermal host of a cogeneration facility, are not related facilities.

(o) "Application" means either an Application for Certification or an application for a Small Power Plant Exemption, unless otherwise indicated.

(p) "Local agency" means any local or regional governmental authority within the state, including but not limited to, any city, county, air pollution control or air quality management district, or Native American government.

(q) "Areas of critical concern" means special or unique habitats or biological communities that need protection from potential adverse effects resulting from project development and which may be identified by local, state, or federal agencies with resource responsibility within the project area, or by educational institutions, museums, biological societies, or special interest groups with specific knowledge of resources within the project area. This category includes, but is not limited to, wildlife refuges, wetlands, thermal springs, endangered species habitats, and areas recognized by the California Natural Area Coordinating Council and the Governor's Office of Planning and Research.

(r) "Performance criteria" means performance goals for which the applicant proposes to design the facilities.

(s) "MCE" means Maximum Credible Earthquake as defined by the United States Geological Survey.

(t) "MPE" means Maximum Probable Earthquake as defined by the United States Geological Survey.

(u) "Impact area" means the area which is potentially affected by the construction, modification, or operation of a site and related facilities.

(v) "Species of special concern" means candidate rare, threatened, or endangered species that may need protection from potential adverse effects resulting from project development and which may be identified by local, state, or federal agencies with resource responsibility within

the project area or by educational institutions, museums, biological societies, and special interest groups with specific knowledge of resources within the project area. In addition to species designated pursuant to state or federal law, this category includes, but is not limited to, those rare and endangered plant species recognized by the Smithsonian Institution or the California Native Plant Society.

NOTE: Authority cited: Sections 25213, 25218(e), and 25541.5, Public Resources Code. Reference: Sections 21061.1, 25502, 25519, 25540, 25540.1, 25540.2, and 25541.5, Public Resources Code; Title 14, California Code of Regulations, section 15364.

B. Filing and Information Requirements for Notices and Applications

/ 1704. Information Requirements for Notices and Applications.

(a) General Requirements. All notices and applications shall conform to the following requirements:

(1) Except where otherwise indicated, any descriptions, statements, analyses, and discussions required in the notice or application shall extend to the site and related facilities.

(2) An applicant may incorporate by reference any information developed or submitted in any previous commission proceeding, provided that the notice or application contains a summary of the referenced material, identifies the proceeding in which it was submitted, and explains the relevance of the material to the information requirement. To the extent possible, the applicant should rely on findings, conclusions, analyses, policies, and other guidelines adopted or established in the most recent Biennial Report in order to satisfy the information requirements.

(3) The notice or application shall include or reference the following:

(A) Descriptions of all significant assumptions, methodologies, and computational methods used in arriving at conclusions in the document;

(B) Descriptions, including methodologies and findings, of all major studies or research efforts undertaken and relied upon to provide information for the document; and a description of ongoing research of significance to the project (including expected completion dates); and

(C) A list of all literature relied upon or referenced in the documents, along with brief discussions of the relevance of each such reference.

(4) Each principal subject area covered in a notice or application shall be set forth in a separate chapter or section, each of which shall identify the person or persons responsible for its preparation.

(b) The informational requirements for notices, applications for certification, and applications for a small powerplant exemption are contained in this section and in appendices to this Chapter. Maps required in this section and in the appendices shall be provided at the scale specified in the appendices, except that applicants may provide maps at a different scale if the maps are legible and if a written explanation of why this different scale is more appropriate is included in the notice or application. The term region means a geographic area that is normally contiguous and exhibits similar geographic characteristics. The term vicinity means both that area in close proximity to the project site and which receives a preponderance of the direct impacts of the project. The area referred to by the terms vicinity and region will overlap; although, in most circumstances, the vicinity will be part of the region. The size of the region and vicinity that should be discussed in the filing will vary depending on the project's location (e.g., rural, urban, coastal), its technology (e.g., nuclear, coal, geothermal), and by technical area. Applicants should use their professional judgment in determining the appropriate size of the region and vicinity to be discussed in the application. A statement explaining the extent of the area described for each technical area shall be included.

(1) The notice of intention shall contain all the information specified in Appendix A to this chapter for a nongeothermal site and related facilities, and Appendix C for a geothermal site and related facilities.

(2) The application for certification shall contain all information specified by Appendix B of this chapter and the commission decision approving the notice, if any.

(3) Except where otherwise indicated, any descriptions, statements, analyses, and discussions required in a geothermal notice or application shall extend to the geothermal power plant and associated geothermal field, including, but not limited to, wells that supply the power plant or re-inject geothermal fluids, resource conveyance lines, major access roads, storage sites, switchyards, waste disposal sites, and all other structures or improvements which are related to the power plant. Information and data concerning the associated geothermal field are required to the extent that they relate to the environmental impacts of the entire project or to the reliability of the proposed power plant. Absent new information or changed circumstances, incorporation of environmental impact reports on the geothermal field will fulfill the requirements for field information.

(4) Where required information on any aspect of the proposed geothermal power plant is unavailable, the geothermal notice may contain typical operating data or projections representative of the size and type of the facilities proposed, together with a discussion of the applicability of the data to the proposed facilities, an identification of limitations inherent in the representative data, an explanation for the unavailability of the required information, and an estimate of when such information will be available. The substitution of representative or projected information for the information requested in Appendix C is intended to allow and encourage the filing of a notice prior to the discovery or confirmation of commercial resources.

(5) The application for small powerplant exemption shall contain all the information specified by Appendix F.

NOTE: Authority cited: Sections 25213, 25216.5(a), 25218(e), and 25541.5, Public Resources Code. Reference: Sections 21080.5, 25308.5, 25504, 25519(a), 25519(c), 25520, 25522(b), 25523(d)(1), 25540.1, 25540.2, 25540.6, 25541, Public Resources Code.

/ 1705. Form of Submissions.

Paper copies of notices and applications, and any other documents attached thereto, submitted pursuant to this article, shall conform to the requirements of Section 1209 of these regulations and shall be submitted in a three-ring binder in a loose-leaf fashion, with pages numbered by chapter.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Sections 25502 and 25519, Public Resources Code.

/ 1706. Number of Copies.

(a) The applicant shall file with the commission one hundred fifty (150) copies of any notice and of all drawings, photographs, maps, diagrams, charts, graphs, and other documents attached to the notice or, alternatively, 100 paper copies and 50 copies in a CD-ROM medium and the format specified in Section 1209.5, unless otherwise specified by the Executive Director for the convenience of interested agencies, the parties, and the public.

(b) The applicant shall file with the commission one hundred twenty-five (125) copies of any application for certification and of all drawings, photographs, maps, diagrams, charts, graphs, and other documents attached to the application or, alternatively, 75 paper copies and 50 copies in a CD-ROM medium and the format specified in Section 1209.5, unless otherwise specified by the Executive Director for the convenience of interested agencies, the parties, and the public.

(c) The applicant shall file with the commission one hundred (100) copies of any application for a small powerplant exemption and of all drawings, photographs, maps, diagrams, charts, graphs, and other documents attached to the application or, alternatively, 75 paper copies and 25 copies in a CD-ROM medium and the format specified in Section 1209.5, unless otherwise required by the Executive Director for the convenience of interested agencies, the parties, and the public.

(d) The applicant shall also file the same number of copies, specified in subsections (a) or (b) above, of any subsequent documents required by the Commission for completeness under section 1709.

(e) In addition to the materials filed pursuant to subsections (a), (b), or (c) above, the applicant shall file five (5) copies of all documents cited in the notice or application which are not available at public libraries or other governmental agencies in the City or County of Sacramento. For each document which is so available, the filing shall state where the document can be found.

(f) The executive director may waive the requirement for filing the number of copies specified by this section for any document for which reproduction and filing of that number of copies would constitute an unreasonable burden to the applicant. A written request for a waiver may be submitted to the executive director at any time prior to the filing of a notice or application. The request shall include a description of each such document and a discussion of the reasons why reproduction and filing of that number of copies is unreasonable. An applicant may not file a notice or application while such request is pending. If a request is granted, the executive director shall specify the number of copies of the document to be filed. The executive director shall act on all such requests within 15 days.

(g) Upon filing a notice or application pursuant to this article, the executive director may require the filing of additional copies of the notice or application and associated documents, if necessary, to satisfy the requirements of interested agencies, the parties, and the public.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Sections 25502 and 25519, Public Resources Code.

/ 1707. Authority and Verification.

Every notice and application shall be dated and signed by each applicant attesting under penalty of perjury to the truth and accuracy of such notice or application. If any of the applicants are corporations or business associations, the notice or application shall be dated, signed, and attested to by an officer thereof. Where a notice or application is filed on behalf of a joint venture or proposed joint venture, all members of the joint venture or proposed joint venture shall date, sign, and attest to the notice or application; provided, however, that no more than one member of said joint venture or proposed joint venture need attest as to the entire notice or application, but that each joint venturer or proposed joint venturer shall attest to the notice or application with respect to the information required by Section 1704 regarding need for the project and financial impacts of the proposal.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Sections 25502 and 25520, Public Resources Code.

/ 1708. Fees.

(a) A cashier's check in the amount required by Section 25802 of the Public Resources Code shall be prepared by the applicant and shall accompany the notice.

(b) Upon the demand of the executive director, the applicant shall pay additional fees to the commission in the amount of any reimbursement made to local agencies by the commission pursuant to Section 1715 of this article.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Sections 25538 and 25802, Public Resources Code.

/ 1709. Filing of Notices and Applications for Certification; Data Adequacy Review and Docketing.

(a) Upon the filing of any notice or application for certification, all documentation shall be reviewed by the executive director or a delegatee to determine whether the notice or application for certification contains the information required under section 1704 and is therefore complete. The executive director or a delegatee shall take into consideration the timely comments of the Air Resources Board, local air pollution control districts, other agencies, and members of the public prior to the determination of whether the notice or application for certification contains the information required under section 1704 and is therefore complete.

(b) No later than 30 days after the receipt of a non-geothermal notice or application and no later than 20 days after receipt of a geothermal notice or application for certification, the executive director shall file his or her recommendation on whether the notice or application for certification contains the information required under section 1704 and is therefore complete.

(c) No later than 45 days after receipt of a nongeothermal notice or application for certification, and no later than 30 days after receipt of a geothermal notice or application for certification, the commission shall act upon the executive director's recommendation as to whether the notice or application for certification contains the information specified in Section 1704 and is therefore complete. If the commission determines that the notice or application for certification is complete, the notice or application for certification shall be deemed accepted for the purpose of this section on the date that this determination is made. If the commission determines that the notice or application for certification is incomplete, the commission shall indicate, in writing, those parts of the notice or application for certification which fail to meet the information requirements and the manner in which it can be made complete.

(d) If the applicant files additional data to complete the notice or application for certification, the commission shall determine, within 30 days of the receipt of that data, whether the data is sufficient to make the notice or application for certification complete. The notice or application for certification shall be deemed filed on the date when the commission determines the notice or application for certification is complete if the commission has adopted regulations specifying the informational requirements for a complete notice or application for certification, but if the commission has not adopted regulations, the notice or application for certification shall be deemed filed on the last date the commission receives any additional data that completes the notice or application for certification.

(e) On or before acceptance of a notice or application for certification or upon filing of an application for a small powerplant exemption, a committee, a presiding member and a hearing officer shall be designated pursuant to Sections 1204(a) and 1205 to conduct proceedings on the notice or application.

NOTE: Authority cited: Section 25213 and 25541.5, Public Resources Code. Reference: Sections 25211, 25502, 25504, 25516.6, 25520, 25522, 25540.1, 25540.2, Public Resources Code.

/ 1709.5. Prefiling Review.

(a) A potential applicant may request the executive director to conduct a prefiling review of existing environmental and other documentation relevant to a proposed notice or application. The purpose of such a review shall be to determine the extent to which information contained in the existing documents is sufficient to meet the information requirements for a notice or an application.

(b) Any request pursuant to this section shall be in writing and shall be accompanied by at least twelve (12) copies of each document which the potential applicant requests to have reviewed. The executive director may recommend that additional documents known to the commission staff be included in the document review. Potential applicants may, and are encouraged to, file documents in the form of a draft or proposed notice or application.

(c) If the executive director determines that a prefiling review is appropriate, the executive director shall, by such time as may be mutually agreed upon by the potential applicant and the executive director, determine whether the information provided is sufficient to meet the information requirements of a notice or application and, where appropriate, shall provide the potential applicant with a list identifying the additional information necessary to comply with the information requirements.

(d) The potential applicant may request a workshop with the commission staff to discuss any matter relevant to the preparation of a notice or application. The public shall be notified at least 10 days in advance of any such workshop by the executive director in consultation with the public adviser. Nothing in this section shall prohibit a potential applicant from informally exchanging information or discussing procedural issues with the staff without a publicly noticed workshop.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Sections 25502, 25520 and 25540.3, Public Resources Code.

/ 1709.7. Informational Hearing, Site Visit, and Schedule.

(a) Within 45 days after the acceptance of a notice or application for certification or the filing of an application for small powerplant exemption, the committee shall hold one or more informational presentations and site visits in the county or counties in which the proposed sites and related facilities are proposed to be located. The place of the presentations shall be as close as

practicable to the proposed sites. Notice of the first informational presentation shall be mailed to all owners of land adjacent to the proposed sites.

(b) At or before the first informational presentation, the commission staff shall file with the committee a written statement summarizing the major issues that the staff believes will be presented in the case. This summary shall not preclude the staff or any other party from raising additional issues later in the case.

(c) No later than 15 days after the last informational presentation, the presiding member shall issue an order establishing the schedule for the prehearing phase of the proceedings on the notice or application. The presiding member may change the schedule at any time upon motion by any party or upon his own motion.

(d) At each informational presentation, the applicant shall describe the proposed project, and the staff shall explain how the certification or exemption proceedings are conducted. These presentations shall allow for informal questions to the applicant and the staff from local residents and other interested persons regarding the proposed sites and facilities.

NOTE: Authority cited: Sections 25213 and 25541.5, Public Resources Code. Reference: Sections 25214, 25216.5, 25509, Public Resources Code.

/ 1709.8. Withdrawal of Notice or Application.

(a) Any time after acceptance, the applicant may withdraw the notice or application by filing and serving on all parties written notice of withdrawal. The notice of withdrawal must be authorized and verified in the same manner as the original notice or application, as provided in Section 1707.

(b) Upon receipt of a properly executed withdrawal, the presiding member, or if there is none, the Chairman, shall immediately issue a written order to terminate the notice or application proceeding and close the docket. The records and documents of the proceeding shall continue to be maintained by the Docket Unit.

(c) If the applicant decides to go forward with a project after the notice or application proceeding is terminated, the applicant must file a new notice or application under Section 1709.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25216.5, Public Resources Code.

C. Public and Agency Rights and Responsibilities; Provisions Applicable to Notices and Applications

/ 1710. Noticing Procedures; Setting of Hearings, Presentations, Conferences, Meetings, Workshops, and Site Visits.

(a) All hearings, presentations, conferences, meetings, workshops, and site visits shall be open to the public.

(b) Except for the hearing conducted pursuant to Section 1809(a) and the workshop pursuant to Section 1709.5(d), notice of the initial public hearing on a notice or application shall be mailed or otherwise delivered fourteen (14) days prior to the first such hearing to the applicant, intervenors, and to all persons who have requested notice in writing. Except for continued hearings, notice of each and every subsequent hearing, presentation, conference, meeting, workshop, or site visit shall to the extent possible be mailed at least fourteen (14) days in advance, and in no case less than ten (10) days in advance.

(c) The public adviser shall be consulted in the scheduling of locations, times, and dates for all hearings, presentations, conferences, workshops, meetings, and site visits so as to encourage not to preclude maximum public participation.

(d) Notice of hearings, conferences, and meetings shall be signed by a member of the committee or specific designee thereof.

(e) The public adviser shall be afforded a reasonable opportunity to review all notices of hearings, presentations, conferences, meetings, workshops, and site visits for timeliness, completeness, clarity, and adequacy of dissemination.

(f) Hearings, presentations, conferences, meetings, workshops, and site visits may be continued from the date, time, and place originally scheduled to a future date, time, and place, by posting notice at the door in the same manner as provided by Government Code section 11129. If the continuance is to a date ten days or more in the future, then notice shall also be provided by mail as provided in subdivision (b).

(g) Hearings, presentations, conferences, meetings, workshops, and site visits may be canceled for good reason, provided the following requirements are met:

(1) A notice of cancellation shall be posted at the door in the same manner as provided by Government Code section 11129.

(2) A notice of cancellation shall be mailed as provided in subdivision (b).

(3) If the notice of cancellation is mailed less than ten (10) days before the originally noticed date, then the staff shall work with the public adviser to ensure that notice is provided to all interested parties by the best means available.

(h) Nothing in this section shall prohibit an applicant from informally exchanging information or discussing procedural issues with the staff without a publicly noticed workshop.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 11129, Government Code; Sections 25216.5 and 25222, Public Resources Code.

/ 1711. Right of Any Person to Comment.

Any person interested in a notice or application proceeding shall be given any opportunity to make oral or written comments on any relevant matter at any hearing or information meeting held on a notice or an application. The presiding member may specify such conditions on the right to comment as are reasonably necessary for the orderly conduct of the proceeding, and may request that written comments be submitted in advance of any hearing.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1712. Right to Become a Party; Rights and Duties.

(a) Any person may petition to intervene pursuant to Section 1207 of these regulations. Any person whose petition is granted by the presiding member shall have all the rights and duties of a party under these regulations. No person who becomes a party shall be permitted to reopen matters or reopen discovery dealt with in the proceeding prior to the time when such person became a party, without a showing of good cause.

(b) Each party shall have the right to present witnesses, to submit testimony and other evidence, to cross-examine other witnesses, to obtain information pursuant to Section 1716, and to file motions, petitions, objections, briefs, and other documents relevant to the proceeding. Each party shall be provided with a copy of the notice or application.

(c) Each party shall have the responsibility to comply with the requirements for filing and service of documents, the presentation of witnesses and evidence, and any other reasonable conditions which may be imposed by order of the presiding member.

NOTE: Authority cited: Sections 25218(e) and 25541.5, Public Resources Code. Reference: Section 25214, Public Resources Code.

/ 1712.5. Staff as an Independent Party.

In carrying out its duties pursuant to this chapter, the staff of the commission shall be an independent party to all notice, application, and exemption proceedings. The staff is not required to petition to intervene in such proceedings.

NOTE: Authority cited: Section 25213, Public Resources Code. Reference: Section 25217(b), Public Resources Code.

/ 1713. Summary of Notice or Application; Distribution.

(a) Upon filing of the notice or application, the executive director shall prepare a summary of such notice or application. The summary shall be concise and understandable, shall fairly describe the content of the notice or application using the applicant's own words whenever possible, and shall include a description of the commission's procedures concerning proceedings on the notice or application, as appropriate.

(b) As soon as practicable after its preparation, the executive director shall cause a copy of the summary to be mailed or otherwise delivered to public libraries in communities near the proposed sites, including the main branch of a public library in each county in which a facility is proposed to be located in whole or in part; to libraries in Eureka, Fresno, Los Angeles, San Diego, and San Francisco; and to all members, to the ex officio members, to the public adviser, to the hearing officer, to the general counsel, to the applicant, to any person who requests such mailing or delivery, and to all parties to the proceeding.

(c) As soon as practicable after its preparation, the executive director shall cause the summary to be published in a newspaper of general circulation in each county in which a site and related facility, or any part thereof, designated in the notice or application, are proposed to be located.

NOTE: Authority cited: Sections 25218(e) and 25541.5, Public Resources Code. Reference: Section 25505 and 25519(g), Public Resources Code.

/ 1714. Distribution of Copies to Public Agencies; Request for Comments.

(a) As soon as possible after receipt of the notice or application for a site and related facility requiring a certificate of public convenience and necessity, the executive director shall transmit a copy thereof to the Public Utilities Commission and shall request the Public Utilities Commission to perform an analysis and to offer comments and recommendations regarding the economic, financial, rate, system reliability, and service implications of the design, construction, operation, and location of the site and related facilities. For applications for a site and related facility which does not require a certificate of public convenience and necessity, the executive director shall transmit a notice of receipt of the application to the Public Utilities Commission.

(b) Within ten days after receipt of the application for a site and related facility that is proposed to connect to the California Independent System Operator-controlled grid, the executive director shall transmit a copy thereof to the California Independent System Operator and shall request the California Independent System Operator to perform an analysis and to offer comments and recommendations regarding the system reliability implications and identification of interconnection facilities required for connection to the California Independent System Operator-controlled grid. For applications which do not connect to the California Independent System Operator-controlled grid, the executive director shall transmit a notice of receipt to the California Independent System Operator.

(c) The executive director shall also transmit a copy of the notice or application to the Coastal Commission for any site located in the coastal zone, to the Bay Conservation and Development Commission (BCDC) for any site located in the Suisun Marsh or the jurisdiction of the BCDC, to the California Department of Fish and Game, to the Air Pollution Control District in which the project is located, to the Water Resources Control Board in which the project is located, to all federal, state, regional, and local agencies which have jurisdiction over the proposed site and related facility, or which would have such jurisdiction but for the commission's exclusive authority to certify sites and related facilities pursuant to Chapter 6 (commencing with 25500) of Division 15 of the Public Resources Code, and to any other federal, state, regional, or local agency which has been identified as having a potential interest in the proposed site and related facility, and shall request analyses, comments, and recommendations thereon.

(d) The executive director shall transmit a copy of the notice or application to any Native American government having an interest in matters relevant to the site and related facilities proposed in the notice or application provided the Native American government has a governing body recognized by the Secretary of the Interior of the United States or the Native American government has otherwise requested in writing to receive a copy of the notice or application.

(e) The commission shall request any Native American government covered under subsection (c) to make comments and recommendations regarding the design, operation, and location of the facilities proposed in relation to the environmental quality, public health and safety, and other factors on which they may have expertise. To the extent that the Native American government has land use and related jurisdiction in the area of the proposed sites and related facilities, the commission shall request the Native American government to review and comment upon the land use and related aspects of the proposed sites and related facilities.

(f) Upon receiving a copy of the notice or application, each agency requested to file comments shall inform the presiding member (or the executive director if no committee has been appointed yet) of when such comments can be filed with the commission. Unless otherwise specified by law or by order of the presiding member, all such comments shall be filed prior to the conclusion of the evidentiary hearings held pursuant to Sections 1723, 1748, and 1944 on the notice or application.

NOTE: Authority cited: Sections 25218(e) and 25541.5, Public Resources Code. Reference: Sections 25505, 25506, 25506.5, 25507, and 25519, Public Resources Code.

/ 1714.3. Agency Comments on a Notice; Purpose and Scope.

Any agency requested, pursuant to Section 1714 of this article, to transmit its comments and recommendations to the commission on a site and related facility proposed in the notice shall be requested to do each of the following:

(a) Identify each aspect of the proposed site and related facility for which the agency has land use or related jurisdiction or would have such jurisdiction but for the exclusive authority of the commission to certify sites and related facilities;

(b) List and summarize the nature of the laws, regulations, ordinances, or standards which the agency administers or enforces and which are applicable to the proposed site and related facility or would be applicable but for the commission's exclusive authority to certify sites and related facilities pursuant to Section 25500 of the Public Resources Code;

(c) Describe the nature and scope of the information requirements which the applicant must eventually meet in order to satisfy the substantive requirements of the agency; summarize the agency's procedures for resolution of such requirements and indicate the amount of time necessary to do so; describe any other studies, analyses, or other data collection which the applicant, agency, or commission should perform in order to resolve each substantive or permit requirement of the agency;

(d) Based upon available information, conduct a preliminary analysis and provide comments and recommendations to the commission regarding the design, operation, and location of the facilities proposed in the notice, in relation to environmental quality, public health and safety, and other factors on which the agency has expertise or jurisdiction. The preliminary analysis shall be limited to that necessary to advise the commission on whether there is a reasonable likelihood that the proposal will be able to comply with the agency's applicable laws or concerns. The analyses should identify aspects of the proposed site and facilities which are likely to disqualify a proposal as an acceptable site and related facility; and

(e) Submit to the commission, and upon request of the presiding member, present, explain, and defend in public hearings held on the notice, the results of the agency's analyses, studies, or other review relevant to the notice.

NOTE: Authority cited: Sections 25218(e) and 25541.5, Public Resources Code. Reference: Sections 25506 and 25509.5, Public Resources Code.

/ 1714.5. Agency Comments on an Application; Purpose and Scope.

Any agency requested, pursuant to Section 1714 of this article, to submit its comments and recommendations to the commission on any aspect of the application shall be requested to do each of the following:

(a) Update as necessary the information requested or submitted by the agency during the notice proceedings;

(b) Perform or conduct such analyses or studies as needed to resolve any significant concerns of the agency, or to satisfy any remaining substantive requirements for the issuance of a final permit by the agency which would have jurisdiction but for the commission's exclusive authority, or for the certification by the commission for the construction, operation, and use of the proposed site and related facilities; and

(c) Submit to the commission, and upon request of the presiding member, present, explain, and defend in public hearings held on the application, the results of the agency's analyses, studies, or other review relevant to the application. The agency may submit comments and

recommendations on any aspect of the application, including among other things, the design of the facility, architectural and aesthetic features of the facility, access to highways, landscaping and grading, public use of lands in the area, and other aspects of the design, construction, or operation of the proposed site and related facility.

NOTE: Authority cited: Sections 25218(e) and 25541.5, Public Resources Code. Reference: Sections 25519(f), (g), (j), Public Resources Code.

/ 1715 Reimbursement of Local Agencies.

(a) Costs eligible for reimbursement.

(1) Local agencies shall be reimbursed for costs incurred in accordance with actual services performed by the local agency, provided that the local agency follows the procedures set forth in this section. These costs include:

(A) permit fees, including traffic impact fees, drainage fees, park-in-lieu fees, sewer fees, public facilities fees and the like, but not processing fees, that the local agency would normally receive for a powerplant or transmission line application in the absence of Commission jurisdiction, and

(B) the added costs of services performed directly in response to Commission requests for review that are not normally covered by the permit fee and for which a fee is normally charged.

(b) Costs ineligible for reimbursement. A local agency may not be reimbursed under this section for the following types of costs, even if actually incurred:

(1) expenses incurred by a local agency for the presentation or defense of positions not reasonably related to the matters which the agency is requested to review or not within the area of the agency's expertise;

(2) expenses for which it receives payment from other sources;

(3) expenses incurred in advocating a position as a formal intervenor to the proceeding, except for the local district and Air Resources Board presentations pursuant to Section 1744.5; or

(4) entertainment and first class travel expenses.

(c) Procedure for approving reimbursement budgets.

(1) To be eligible for reimbursement, a local agency must receive a request for review from the Chairman, Presiding Member, or Executive Director.

(2) To apply for reimbursement, a local agency shall, within 21 days of receiving a request for review from the commission, file an itemized proposed budget with the staff and the applicant estimating the actual and added costs that are likely to be incurred during such review.

The proposed budget shall justify each line item amount and explain how each line item is reasonably related to the matters which the agency is requested to review. A local agency's failure to file a proposed budget within the time period specified herein shall not prevent it from receiving reimbursement; however, failure to use the approval process described in this section creates a risk that the local agency will not be reimbursed for work already performed.

(3) Within 10 working days of receiving a proposed budget, the staff shall notify the agency, in writing, whether the proposed budget is complete or incomplete. If the proposed budget is incomplete, the staff shall provide the local agency with a list of deficiencies that must be corrected to complete the proposed budget request.

(4) If neither the commission staff nor the project applicant files a written objection to the proposed budget within 10 working days after the proposed budget is determined to be complete, then the proposed budget is deemed approved.

(5) If a local agency reasonably incurs costs in responding to a commission request for review of a project before its proposed budget is approved, the local agency may include such costs in the budget retroactively.

(6) A local agency may apply for augmentations or other changes to an approved budget by filing a request for an amended budget. Requests for an amended budget shall also be processed in accordance with this subdivision.

(d) Procedure for approving reimbursement invoices.

(1) A local agency seeking reimbursement must receive approval of its proposed budget before it files an invoice for expenses actually incurred. Reimbursement may not exceed the approved budget.

(2) On either a monthly or quarterly basis, the local agency seeking reimbursement shall file with the commission staff and the project applicant an invoice for the expenses actually incurred during the past month or quarter.

(3) If the applicant does not object to the invoice within 10 days after receipt, then it shall pay the local agency the amount of the invoice within 14 days of the receipt of the invoice.

(e) Resolving disputes. If there is a dispute over a reimbursement budget under subdivision (c) above, or a reimbursement invoice under subdivision (d) above, which cannot be directly resolved between the applicant and the local agency, the staff shall notify the committee in writing of the dispute. The committee shall resolve the dispute by written order. The committee shall have discretion to determine whether and to what extent hearings are required to resolve the dispute.

NOTE: Authority cited: Section 25218(e), Public Resources Code. Reference: Section 25538, Public Resources Code.