1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

Midway Power, LLC, the Applicant, is seeking approval from the California Energy Commission (CEC) to construct and operate the Tesla Power Project (TPP). The proposed project will be fueled with natural gas and will have a nominal electrical output of 1,120 MW. The in-service date is planned for the 2nd quarter of 2004. The plant will generate and supply power to the Pacific Gas & Electric (PG&E) Tesla substation via a new 0.8 mile transmission line. The project facilities will consist of a natural gas-fired combined cycle power plant and associated linear facilities. The project will employ advanced combustion turbine technology and state-of-the-art emissions control systems to provide a highly efficient and environmentally sound source of electricity for California's restructured electricity market.

The TPP offers the following features and benefits:

- Provides an additional 1,120 MW of power to the State of California (enough electricity to supply approximately 1,100,000 homes).
- Provides direct employment by creating approximately 974 (peak) construction jobs and 36 full-time jobs for operation of the plant.
- Contributes to the local economy by the purchase of goods and services during project construction and provides sales and property tax revenues and employment during project operation.
- Provides a net reduction in regional air pollutant emissions (emission reductions supplied by the project will substantially exceed project emissions).

This Application for Certification (AFC) for the proposed project has been prepared in accordance with CEC guidelines and provides:

- A description of the proposed project.
- A description of the need for the project.
- An assessment of project impacts on the existing environment.
- A description of proposed mitigation measures to assure that environmental issues are properly and responsibly addressed.
- Discussion of compliance with applicable laws, ordinances, regulations and standards.

1.2 PROJECT OWNERSHIP

The project owner and Applicant submitting this AFC is Midway Power, LLC, a Delaware limited liability company.

1.3 PROJECT NEED

Because the proposed project will interconnect at PG&E's Tesla Substation, it will serve the Greater Bay Area load center and will add much needed reliability to an area subject to peak capacity losses and load shedding (see Appendix I, PG&E System Impacts/Facilities Study). As a load center plant, the project will improve grid reliability and provide direct energy saving benefits.

1.4 PROJECT SCHEDULE

On-site construction of the project is expected to take place from May 2002 to April 2004, a total of about 23 months. Commercial operation is planned for second quarter of 2004. The average and peak on-site construction workforce is estimated to be approximately 485 and 974 individuals, respectively.

1.5 FACILITY LOCATION AND DESCRIPTION

1.5.1 Facility Location

The TPP will be located on a 60-acre portion of a 160 acre parcel (Assessor's parcel No. 99B-7825-1-4 Section 30, Township 2S, Range 4E) in Alameda County, approximately 0.5 miles north of the PG&E Tesla substation. The 60-acre project site, controlled under a purchase and sale agreement, is bordered by an abandoned railroad right-of-way to the north and Midway Road to the east. Site access will be provided from Midway Road. An adjacent 49 acre parcel (Assessor's parcel No. 99B-7885-1-2) will be used for temporary construction laydown.

1.5.2 Facility Description

The proposed TPP consists of a natural gas-fired combined cycle power plant and associated linear facilities. The project will have a nominal electrical output of 1,120 MW with commercial operation planned to begin in the second quarter of 2004. Natural gas will be conveyed to the power plant site via a new 24 inch 2.8-mile pipeline that connects to an existing PG&E pipeline. The plant will generate and supply power to power purchasers via the Cal-ISO grid, over transmission lines owned and operated by PG&E and possibly by others. A new 0.8 mile double-circuit 230 MW transmission line will connect the plant switchyard to the PG&E Tesla substation. Water will be supplied to the site via a new 1.7 mile pipeline from the California Aqueduct. Wastewater will be disposed using a zero liquid discharge system.

1.5.3 Site Arrangement

A new 24-foot wide paved road extending from Midway Road will provide access to the power plant site. A 20-foot wide, paved loop road will provide access to facilities on the power plant site.

Approximately 25 fenced acres are required to accommodate the power plant, including the parking area, administration building, control building, water treatment building, storage

tanks, generation facilities, site switch yard, and emission control equipment. Runoff detention basins will occupy approximately 1.5 acres.

1.5.4 Transmission Interconnection

The interconnection to the existing PG&E transmission system will be at the Tesla substation.

PG&E has conducted a System Impact/Facilities Study for the proposed interconnection. The report concludes that the proposed generating plant and interconnection bring seriously needed generation to the Greater Bay Area load center. It reduces the real and reactive system losses, thus improving area transmission voltage levels and reactive margin. It also eliminates the need for load shedding for particular multiple contingency conditions.

1.5.5 Fuel Supply

The project will be fueled with natural gas by interconnection with the PG&E California Gas Transmission System south of the intersection of I-205 and Patterson Pass Road, in San Joaquin County. Natural gas will be conveyed to the power plant site via a new 2.8-mile, 24 inch supply pipeline that follows the route of PG&E pipeline #107.

1.5.6 Water Supply

Annual average project water requirements will be approximately 5,100 AF/year. Water will be provided under agreement with Rosedale-Rio Bravo Water Storage District in Kern County and will be delivered to the site from the California Aqueduct under an agreement with the Alameda County Flood Control and Water Conservation District (Zone 7).

1.5.7 Wastewater Disposal

The proposed project will have separate plant wastewater and sanitary wastewater collection systems. The plant wastewater system will collect wastewater from all plant equipment, including the cooling tower and HRSGs, water treatment system, chemical feed area drains, and general plant drains. The plant wastewater will be directed to a zero liquid discharge system for treatment.

The sanitary system will collect sanitary wastewater from sinks, toilets, and other sanitary facilities and discharge it to a county-approved on-site septic system.

1.6 FACILITY OPERATION

The power plant will be operated up to 7 days per week, 24 hours per day and will employ about 36 full-time personnel. Overall annual availability of the power plant is expected to be in the range of 92 to 96 percent. The power plant's capacity factor will depend on market prices for electricity, ancillary services, and natural gas. The design of the power plant provides for operating flexibility (i.e., ability to start up, shut down, turn down, and provide peaking output) so that operations may be readily adapted to changing conditions in the energy and ancillary services markets.

1.7 SAFETY

The proposed project will emphasize safety throughout its design, construction, and operation. Safety and emergency systems will be incorporated into the design of the facility to ensure safe and reliable operation. The project will be designed in conformance with California Building Code (CBC) criteria for Seismic Zone 4. The power plant site is located above the 100-year floodplain. Fire protection will include both automatic and manual fire suppression systems. Worker safety programs will be developed for both construction and operation, and these programs will be implemented to assure compliance with federal and state occupational safety and health requirements.

1.8 ENVIRONMENTAL CONSIDERATIONS

1.8.1 Introduction

The TPP will avoid or minimize potential environmental impacts through project design and incorporation of mitigation measures. As a result, the project will have insignificant environmental impacts.

1.8.2 Air Quality

The project will not have a significant adverse impact on air quality. The project will have emissions of criteria pollutants including nitrogen oxides (NO_2), carbon monoxide (CO), precursor organic compounds (POC), sulfur dioxide (SO_2) and particulates less than or equal to 10 microns in diameter (PM_{10}). The project will create a net reduction in regional emissions by providing emission reductions from other regional emission sources that substantially exceed the emissions from the project. In addition, the following mitigation measures will reduce the direct impacts of these pollutants to insignificance:

- The facility will incorporate the following state-of-the-art air pollution controls that reflect Best Available Control Technologies (BACT) to reduce emissions:
  - Dry- low NO_x burner technology and selective catalytic reduction (SCR) to reduce NO_x emissions to 2 ppm @ 15% O_2 dry.
  - An oxidation catalyst to limit CO emissions to 6 ppm @ 15% O_2 dry and POC emissions to 1.65 ppm @ 15% O_2 dry.
  - Natural gas fuel to limit SO_2, and PM_{10} emissions.
  - Low drift plume abated cooling towers to reduce fine particulate emissions.
- Short-term air quality impacts associated with construction activities will be reduced by compliance with Bay Area Air Quality Management District (BAAQMD) requirements, including the following measures:
  - Construction contractors will use water trucks and sprinklers as needed to control dust.
  - Construction contractors will leave the ground outside the project construction area undisturbed to prevent wind erosion.
  - Construction equipment exhausts will meet emissions regulations.

As demonstrated by the air quality modeling, criteria pollutant emissions from the TPP will not cause or contribute to violations of federal or state ambient air quality standards. Therefore, no significant adverse impacts on air quality from criteria pollutant emissions are anticipated.

1.8.3 Biological Resources

The project has the potential for impacts to biological resources including vegetation, wetlands, and wildlife. Biological impacts have been minimized to the extent practicable by siting facilities away from sensitive habitats. The power plant site will be located on a parcel that is heavily grazed by cattle. The water supply pipeline route will be sited adjacent to existing roadways. Approximately 5,000 feet of the natural gas pipeline will be constructed using directional bore techniques to avoid impacts to wetland and riparian areas.

In addition to the mitigation measures incorporated into the project design, the Applicant proposes the following mitigation measures to reduce potential impacts to biological resources to a level of insignificance during project construction:

- The Applicant will designate a biologist to manage all biological resource conditions of certification.
- The Applicant will develop and institute an Employee Environmental Awareness Program to inform construction and operations workers about biological resources associated with the project.
- The Applicant will develop construction mitigation and monitoring plans to protect the following species:

  San Joaquin Kit Fox
  Red-Legged Frog
  Tiger Salamander
  Swainson's Hawk
  Burrowing Owl

- The Applicant proposes to acquire compensation lands or credits to satisfy the requirements of the Federal and California Endangered Species Acts, consistent with standard USFWS and CDFG requirements for compensation of impacts to habitats of the following species:

  San Joaquin Kit Fox
  Burrowing Owl

1.8.4 Water Resources

Project water requirements will be approximately 5,100 AF/year. Water will be supplied under agreement with Rosedale-Rio Bravo Water Storage District in Kern County, and will be delivered via the California Aqueduct under contract with the Alameda County Flood Control and Water Conservation District - Zone 7.

Although the project is designed to conserve water and eliminate wastewater discharge, the project has the potential to affect water resources during construction and operation. Implementation of the following mitigation measures will reduce potential impacts to water resources to a level of insignificance:

- The project will incorporate a zero liquid discharge system designed to eliminate wastewater discharge.
- Incorporation of plume abatement technology will reduce water consumption compared to a non-plume abated cooling tower.
- A runoff basin will be provided to collect storm water runoff from the project site. The basin will be sized to hold runoff of water from the site as required by the County of Alameda.
- Secondary spill containment will be provided around chemical delivery and storage areas, diesel fuel tanks and transformers.

1.8.5 Geologic Resources and Hazards

No significant geological or soil-related impacts are anticipated from the construction or operation of the proposed project. Implementation of the following mitigation measures will reduce the potential for any minor construction or operational impacts to a level of insignificance:

- Final placement and design of the proposed facilities and foundations will follow the recommendations of the soils engineer provided in the site-specific geotechnical report which will be prepared for the project site. Findings and Preliminary Recommendations of Engineering Geology Assessment Report and Midway Fault Investigation Report are in Appendix G.
- The proposed facilities will be designed in accordance with the CBC Seismic Zone 4.
- Erosion control measures through the use of Best Management Practices will be implemented to maintain water quality, protect property from erosion damage, and prevent accelerated soil loss. Temporary erosion control measures will be installed before construction begins and removed from the site after construction is completed and permanent drainage systems and landscaping are installed.

Although no specific impacts were identified, the following mitigation measures will eliminate the potential for any significant impacts:

- Potentially adverse foundation conditions, such as expansive or otherwise unsuitable foundation soils, perched water tables, and corrosive soils, will be mitigated through appropriate design and construction of the facility in accordance with the recommendations in the geotechnical report. Likewise, seismic hazards will be minimized through the implementation of the recommended seismic design criteria.

1.8.6 Agriculture and Soils

Construction of the project would impact grazing lands at the project site, the adjacent construction laydown area, and agricultural and grazing lands along the natural gas pipeline route. Approximately 25 acres of grazing land at the project site will be permanently converted to utility use. Approximately 40 acres will be temporarily disturbed during construction on the project site and adjacent construction laydown area, combined. These lands are currently used for pasture. On the natural gas pipeline route, the temporary disturbance to agricultural production would not last longer than one crop season. Pipeline and transmission line construction would probably not require more than two to three months of construction at any location and, following recontouring to pre-construction conditions, agricultural or grazing use could resume immediately after construction is completed. Overall, the construction impacts to agriculture will be temporary and will not cause a substantial curtailment of agricultural production activity in Alameda or San Joaquin counties. Once the plant site, natural gas pipeline, and transmission line are constructed, there will be minimal impacts to agricultural resources. The power plant and related facilities will occupy approximately 25 acres of the 60 acre site. Loss of this small amount of pasture land is not considered significant.

On agricultural areas crossed by the natural gas pipeline, the pipeline will be buried at a depth that will allow continued use for agriculture. Some of these lands are designated Prime Farmland, however the pipeline route follows an existing PG&E right-of-way and will not change or limit agricultural use. No significant impacts to agricultural use are anticipated.

Appropriate erosion control measures will be required to help maintain soil resources, water quality, protect property from erosion damage, and prevent accelerated soil loss, which destroys soil productivity and its capacity to support and maintain vegetation. Temporary erosion control measures will be installed before construction begins and will be removed from the site after completion of construction. No significant impacts to soil resources are anticipated.

1.8.7 Land Use

Agricultural grazing is the predominant land use at the project site and vicinity. The site is designated "farmland of low importance" by California Department of Conservation. Several 230 kV and 115 kV electric power transmission lines cross the site in a general north-south direction and are supported by steel latticed towers. The PG&E Tesla Substation (approximately 50 acres) is located approximately 0.5 mile south of the project site. It constitutes the largest substation in California, with 4 –500 kV lines, 13 – 230 kV lines, and 6 – 115 kV lines connecting it to other parts of the grid. Wind farm electrical production is another major land use in the area. The project is within the Altamont Pass Wind Resource area.

The TPP will conform with all local plans and regulations and is compatible with general land uses in the project area. The power plant will be located on lands that are: designated Large

Parcel Agriculture in the East County Area Plan; and within the "A-160" (Agriculture – 160 acre minimum parcel size) Zoning District that applies to the Wind Resource Area. The power plant facility will occupy approximately 25 acres of the 60-acre project site, most of which will remain in use as agricultural grazing land. The power plant will be consistent with county and local government planning and policies. Operation of the power plant will not significantly impact land use of the project site or surrounding land uses.

1.8.8 Socioeconomics

The TPP will have a positive impact on fiscal resources in the region. The project will bring both sales tax and property tax revenues to the local area in addition to construction and operating payrolls. Annual property taxes and sales taxes are anticipated to be approximately $6.0 million and $70,000, respectively. Project operational payroll, including salaries, benefits, and incentives, is estimated to be $3.4 million per year.

Local and regional socioeconomic impacts were evaluated for the projected demands presented by construction and operation of the TPP. It is not anticipated that the TPP will have any significant adverse impacts on socioeconomic aspects of the local or regional areas.

On-site construction of the TPP is expected to have duration of approximately 23 months and will provide short-term job opportunities. There appears to be a sufficient supply of labor for the project in Alameda and San Joaquin counties. Some components of the TPP may require some specialized labor from outside of those counties. It is estimated that the project expenditures for locally purchased materials will be $20 million.

The TPP is expected to employ about 36 full-time personnel once it is operational. The increased employment should not cause substantial growth in population or disrupt existing population since jobs are expected to be filled mostly by Alameda and San Joaquin County residents. The construction and operation of the TPP will not have a significant adverse impact on law enforcement, fire, emergency, medical, utility, or education services.

1.8.9 Noise

The project has been designed with significant noise control features to meet the stringent requirement of 45 dBA at night at the closest residences, which are approximately 1.0 mile from the site and on the other side of the Tesla Substation. A proprietary computer model was the analytical tool used to evaluate sources of noise and to determine the degree of silencing required on each piece of equipment to meet the 45 dBA limit. Natural attenuating mechanisms employed in the modeling exercise included divergence of the sound waves, atmospheric absorption, and directivity of sound from the vertical stacks. Based on the modeling results, attenuation was incorporated in the project design. Noise control measures include equipment enclosures, silencers, and insulation.

Although the project has the potential for increased noise levels during construction and operation, the nearest residences are approximately 1.0 mile from the site and Applicant-proposed mitigation measures would ensure that noise impacts are insignificant.

1.8.10 Visual Resources

The project is in an area that has been significantly impacted by numerous existing transmission lines and structures of the PG&E Tesla substation, and hundreds of wind turbines to the west, north, and east of the site. The project site is hidden from view from both I-580 and I-5 by the surrounding hills. The nearest residences are approximately 1.0 mile from the site and close to the Tesla substation, so the potential for the project to cause visual impacts to residences is low. A visual assessment was performed at each residence affected by the project and no significant visual impact was identified. The nearest area with significant public use is Altamont Speedway, which is approximately 1.0 mile from the project site. Because of intervening terrain, there are no direct views of the project. The following mitigation measures are proposed to ensure potential visual impacts from the project remain insignificant:

- Lighting on the project site will be limited to areas required for safety and shielded from public view to the extent possible. Lights will also be directed on-site so that significant light or glare impacts will not be created.
- Structures, stacks, buildings, and tanks will be painted in earth tones. The colors will provide subtle variations and contrast. The selected colors will blend one shade darker than the surrounding predominant landscape colors.
- Landscaping, as proposed in the Conceptual Landscape Plan will be used to visually enhance the project nearfield views from the north, east, and southeast.

1.8.11 Traffic and Transportation

Although current traffic on Midway road is very light, the construction phase of the project will increase traffic on Midway Road and affect traffic circulation in the area. While no significant impacts to traffic and circulation are expected, the following mitigation measures are proposed to ensure that potential construction impacts remain insignificant:

- A secondary construction traffic access road will be in use during construction.
- Parking for all construction workers will be provided on-site.
- The security gate will be within the property to ensure that vehicles waiting to enter the site do not block traffic on local roads.
- Preparation of a construction traffic control plan and implementation program that addresses timing of heavy equipment and building materials deliveries, an employee trip reduction plan; and signing, lighting and traffic control device placement.

Project operation will require a maximum of approximately 20 employees working during the day shift at the project site. The traffic generated by project operations will not cause a significant impact to area roads. The following mitigation measures ensure that any potential operational impacts to traffic remain insignificant:

- Twenty-four parking spaces will be provided on-site to accommodate all employee and visitor vehicles.
- The project's main entrance will be from Midway Road. The security gate will be within the project site so that vehicles waiting to enter the site will not extend to Midway Road.

1.8.12 Hazardous Materials Handling

The TPP will implement accident prevention and mitigation measures to reduce the risk associated with use and storage of hazardous materials. Quantities of hazardous materials used or stored on-site will be evaluated to determine which exceed threshold levels of federal and state risk management and process safety requirements. Plans and programs will be developed and implemented including hazard assessments, release prevention programs, emergency response programs, and process management systems. Engineering and procedural features will minimize the possibility and potential consequences of a release.

On-site storage of hazardous materials will be minimized. Hazardous materials include aqueous ammonia for the SCR system, various water additives and water treatment chemicals including acids and caustics, various cleaning chemicals, and hydrogen for generator cooling. Equipment and containers will be located inside containment berms, and incompatible materials will be stored in separate containment areas. Areas susceptible to potential leaks or spills will be paved and bermed. Piping and tanks will be protected from potential traffic hazards by concrete and/or steel barriers.

1.8.13 Waste Management

Wastes generated by the TPP during construction and operation of the facility will be recycled to the extent practicable. Wastes include non-hazardous solid and liquid wastes (e.g., scrap metal and treated wastewater) as well as hazardous solid and liquid wastes (e.g., spent SCR catalyst and waste lubrication oil). Appropriate procedures and personnel training will provide assurance that non-hazardous and hazardous wastes are properly handled and do not significantly affect the environment or health and safety.

Disposal of non-hazardous waste from the TPP will not significantly impact the capacity of the Class II and III waste disposal facilities identified as available for use by the project. With active recycling efforts in place, the incremental non-hazardous waste disposal capacity needed by the project is not significant.

Similarly, hazardous waste generation and disposal from the TPP will be minimized by recycling and will not significantly impact the capacity of Class I hazardous waste disposal facilities identified as available for use by the project.

1.8.14 Worker Safety

Construction, operation, and maintenance activities associated with the TPP may expose workers to physical and chemical hazards. However, worker exposure to these hazards will be minimized through adherence to appropriate engineering design criteria, implementation of appropriate safety and administrative procedures, use of personal protective equipment, and compliance with applicable health and safety regulations. Fire protection services will be available to the TPP from the Alameda County Fire Department, Station #8, located in Livermore.

During construction of the TPP, written safety programs and procedures will include a hearing conservation program, respiratory protection program, fall protection procedures, hot work procedures, heavy equipment procedures, and others. An emergency action plan will be developed to designate responsibilities and actions to be taken in the event of an emergency during construction of the project. A Phase I Site Assessment has been conducted on the site and the results indicate there is little or no potential for encountering toxic or hazardous waste during construction of the project.

Upon startup of the TPP, the construction health and safety programs will transition into an operation and maintenance-oriented program. The primary mitigation measures for worker hazards present during normal operation and maintenance of the TPP will be contained in an Injury and Illness Prevention Plan. Fire protection will include automatic and manual fire suppression systems as well as fire prevention measures. The TPP will have a site-specific Emergency Action Plan that addresses potential emergencies, actions, and responsibilities. Additional written safety programs will be developed as components of the overall health and safety plan for operation and maintenance of the TPP.

1.8.15 Public Health

The TPP will be fueled with clean burning natural gas to minimize potentially toxic air emissions. The maximum incremental cancer risk at the point of maximum exposure from project emissions was estimated to be 6.85 in one million, well below the CEC significance level of 10 in one million. For sensitive receptors, the maximum chronic "total hazard index" (THI) was estimated to be 0.0211, and the maximum acute THI was estimated to be 0.0739, both well below the significance level of 1.0. Based on this evaluation using conservative assumptions, the TPP emissions are expected to pose no significant cancer or non-cancer health effects.

As demonstrated by the air quality analysis, criteria pollutant emissions from the TPP will not cause or contribute to violations of federal or state ambient air quality standards, which have been set at levels designed to protect pubic health. Therefore, no significant adverse health effects from criteria pollutant emissions are anticipated.

The transmission of energy through transmission line conductors produces an electromagnetic field that decreases in strength exponentially with distance away from the conductors. Based

on the results of extensive research on this subject, the electromagnetic field strength expected at locations of potential, sustained public exposure does not present a health risk.

1.8.16 Cultural Resources

Previous reports, inventories, and evaluations of cultural resources in the project area were reviewed, and a record search was conducted. Site-specific field surveys indicate that there will not be any significant impacts to cultural resources. To ensure that impacts to cultural resources will remain insignificant, the project will implement a cultural resource monitoring program during project construction and make minor adjustments in transmission and pipeline routes as needed.

1.8.17 Paleontological Resources

Literature and archival reviews did not provide evidence of any paleontological resources that would be impacted by the construction or operation of the TPP. Paleontological resource monitoring will be conducted during project construction to ensure that paleontological resources are not adversely affected by earthwork. No impacts to paleontological resources are anticipated during the construction or operation of the TPP.

1.9 SUMMARY

The proposed TPP will provide benefits to the local economy and will help California meet projected generation resource needs. By employing natural gas-fired, advanced combustion turbine technology and state-of-the-art emissions control systems, the project will provide a highly efficient and environmentally sound source of electricity for California's restructured electricity market.

Environmental impacts associated with construction and operation of the proposed TPP has been considered throughout the planning process. In those instances where potential impacts on the environment have been identified, mitigation measures have been selected to ensure that any impacts are not significant.