1.1 INTRODUCTION

The Bullard Energy Center (BEC) is a simple-cycle power generation project that consists of two (2) General Electric (GE) LMS100 natural gas-fired combustion turbine generators (CTGs). The total net generating capacity is 200 megawatts (MW) with each CTG capable of generating 100 MW. The plant will be owned and operated by Bullard Energy Center, LLC (also referred to as applicant). The electricity generated by this project would be in support of a Power Purchase Agreement (PPA) with Pacific Gas and Electric (PG&E). Section 2.0, Project Objectives, describes the contract in more detail. See Figure 1.1-1, Architectural Rendering of Project Site, for a visual representation of the project.

The applicant is seeking approval from the California Energy Commission (CEC) to construct and operate a power generation facility in the City of Fresno in Fresno County. The GE LMS100 is the first inter-cooled gas turbine system developed especially for the needs of the power generation industry. The LMS100 is designed for cyclic applications with 10-minute starts that provide flexible power generation for peaking and intermediate solutions.

BEC is located between Highway 99 and North Golden State Boulevard in an industrially-zoned area in the northwest part of the City of Fresno (see Figure 1.1-1, Architectural Rendering of Project Site). BEC plans to construct a new switchyard on the project site that will consist of step-up transformers, 230 kilovolt (kV) circuit breakers, disconnect switches, and structural H-frames. Power from BEC at this location will assist PG&E with transmission system efficiencies and meeting their overall load demands.

The generating facility includes two (2) LMS100 natural gas-fired CTGs, each equipped with water injection to the combustors for reducing the production of oxides of nitrogen (NO_x), a selective catalytic reduction (SCR) system with 19 percent aqueous ammonia injection to further reduce NO_x emissions, and an oxidation catalyst to reduce carbon monoxide (CO) emissions. The total net generating capacity will be approximately 200 MW. Auxiliary equipment will include inlet air filters with evaporative coolers, turbine compressor section inter-cooler, mechanical draft cooling tower, circulating water pumps, water treatment equipment, natural gas compressors, generator step-up and auxiliary transformers, and water storage tanks.

This Application for Certification (AFC) has been prepared in accordance with the CEC's August 2000 Rules of Practice and Procedure and Power Plant Site Certification, as amended, and is intended to provide:

- A detailed description of the BEC project
- An assessment of the anticipated project impacts on the existing environment
- A discussion of compliance with applicable laws, ordinances, regulations, and standards (LORS)

The remainder of this Executive Summary summarizes the more detailed information presented in the balance of the AFC.

1.2 FACILITY LOCATION AND DESCRIPTION

1.2.1 Facility Location

The BEC plant site is located approximately one and a quarter miles southeast of the intersection of Herndon Avenue and North Golden State Boulevard, at 5829 North Golden State Boulevard, in the City of Fresno. The proposed plant site is a 12.3-acre parcel further described as Assessors Parcel Number (APN) 505-080-22S. The parcel is zoned M-1 (light industrial use) and is located in an industrial area that is currently used as a truck depot, and construction equipment fabrication and storage yard.

The temporary construction laydown and parking site is a 9.2-acre parcel located immediately to the north of the plant site. Power line easements run across the western portion of the laydown area from south to north. This area is essentially flat, with a slight slope to the southeast.

Off site improvements associated with the BEC include the construction of several linear pipeline routes (see Figure 3.4-4, Proposed Linear Routes), and which are described in more detail below, and in Section 3.0, Facility Description and Location.

1.2.2 Facility Description

The generating facility will consist of two (2) GE LMS100 natural gas-fired CTGs, each equipped with water injection to the combustors for reducing production of NO_x, an SCR system with 19 percent aqueous ammonia injection to further reduce NO_x emissions, and an oxidation catalyst to reduce CO emissions. The total net generating capacity will be approximately 200 MW. Auxiliary equipment will include inlet air filters with evaporative coolers, turbine compressor section inter-cooler, mechanical draft cooling tower, circulating water pumps, water treatment equipment, natural gas compressors, generator step-up (GSU) and auxiliary transformers, and water storage tanks.

Each CTG will generate 100 MW net at summer design ambient conditions. The project will have an annual capacity factor no higher than 57 percent, depending on summer load demand.

Associated equipment will include emission control systems necessary to meet the proposed emission limits. Stack emission NO_x, in normal operation, will be controlled to 2.5 parts per million, volumetric dry (ppmvd) corrected to 15 percent oxygen through a combination of water injection in the combustors and operation of the SCR system. The oxidation catalyst will limit normal operation carbon monoxide and volatile organic compound (VOC) stack emissions to 6.0 ppmvd and 2.0 ppmvd, respectively.

The plant will connect to the existing PG&E Herndon-Kearney 230 kV transmission line via a new sub-station located on site. Interconnection at this point will improve PG&E's transmission system effectiveness while providing efficient peaking power for use during peak demand as projected by PG&E.

1.2.3 Fuel Gas Supply

At full load, each CTG will require approximately 900 million British thermal units (MMBtu) per hour (hr) high heating value (HHV) of natural gas, for a total plant demand of 1,800 MMBtu/hr HHV. The project will connect to a PG&E trunk line approximately 9,500 feet west

of the site, near the intersection of North Garfield Avenue and West Bullard Avenue. The primary pipeline route will conveyed gas via a pipeline up to 12 inches in diameter along West Bullard Avenue to North Golden State Boulevard, and then south to the site. Two alternate routes include the same PG&E connection location, continuing north along North Garfield Avenue to Herndon Avenue, then south along North Golden State Boulevard or North Weber Street to the site.

1.2.4 Water Supply and Discharge

A Fresno city water main located near the southeast corner of the site along North Golden State Boulevard will be extended approximately 300 feet, to the northeast corner of the site, to supply water to the project.

Wastewater from the site will be conveyed via an approximate 14-inch diameter, 1,500-foot sewer line proceeding northwest along North Golden State Boulevard, tying into the existing 54-inch City of Fresno trunk line, just north of the intersection of North Golden State Boulevard and West Bullard Avenue.

To offset the use of potable water, BEC proposes to design and fund a project that will produce potable water from contaminated water in an area of the City of Fresno that experiences potable water shortages. In particular, the groundwater underlying the Sunnyside area of southwest Fresno has levels of nitrate that are greater than federal and California's drinking water standards. BEC's funding of this offset project will allow the city to treat and blend water from existing Sunnyside area wells in a manner that meets drinking water standards. This project, with its 20-year operating term, will simultaneously remediate a historical nitrate contamination problem and help alleviate potable water shortages in the Sunnyside area.

In addition to BEC's use of city water for cooling and NO_x control, this same water source will be used to meet BEC's safety water requirements, including fire protection, safety showers, and employee potable water needs.

Stormwater will be conveyed by overland flow and swales to a detention basin to be located in the west portion of the site. This basin will serve as a stormwater treatment facility to manage the quality and quantity of stormwater runoff from the site.

1.2.5 Transmission Facilities

BEC will construct a 230 kV switchyard and looping sub-station on the site to connect to the PG&E transmission system.

1.3 PROJECT SCHEDULE

Construction of BEC is expected to commence in February 2008 following the CEC Authority to Construct (ATC). Construction activities will continue through early 2009 with commissioning activities beginning in summer 2009. It is currently anticipated that BEC will be on-line at or prior to the date required in the PPA.

1.4 PROJECT OWNERSHIP

- Owner: Bullard Energy Center, LLC
- Operator: Bullard Energy Center, LLC

1.5 SUMMARY OF ENVIRONMENTAL IMPACTS

The project has the potential to adversely impact the existing environment. In order to limit potential project impacts to a level of insignificance under normal operating conditions, the applicant has carefully chosen the BEC location and incorporated innovative design measures. Section 5.0, Environmental Information, of this AFC assesses environmental impacts according to the following environmental resources:

- 5.2 Air Quality
- 5.3 Geologic Hazards
- 5.4 Agriculture/Soils
- 5.5 Water Resources
- 5.6 Biological Resources
- 5.7 Cultural Resources
- 5.8 Paleontology
- 5.9 Land Use
- 5.10 Socioeconomic
- 5.11 Traffic/Transportation
- 5.12 Noise
- 5.13 Visual Resources
- 5.14 Waste Management
- 5.15 HazMat Handling
- 5.16 Public Health
- 5.17 Worker Safety
- 5.18 Cumulative Impacts

Refer to Section 5.0, Environmental Information, for detailed assessments of the environmental impacts of the project on the existing environment.

Architectural Rendering of Project Site

Bullard Energy Center

URS

FIGURE 1.1-1

G:\gis\projects\1577\28906905\mxd\visual_arch_rendering.mxd