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TABLES

5.0 NATURAL GAS SUPPLY

5.1 GAS SUPPLY

The project will be fueled with pipeline-quality natural gas delivered by Pacific Gas and Electric Company (PG&E). Gas supplies will be acquired from gas providers in supply regions accessible through the PG&E gas transmission system. Over the life of the project, it is expected that a variety of different suppliers will contract to provide the gas commodity to the PG&E system for transport to the project site. Gas will be procured at market prices.

5.2 GAS PIPELINE INTERCONNECTION

Natural gas will be delivered to the Willow Pass Generating Station (WPGS) by PG&E via a new 12-inch interconnection line, which will run from the existing gas metering station located in the central portion of the PPP site to the WPGS site, as shown on Figure 2.3-2. A new, dedicated metering station will be provided at the western section of the WPGS site, as shown on Figure 2.3-2.

The new gas pipeline will be approximately 2,700 feet long and will terminate at the new gas compressors located in the southwest portion of the WPGS site. These compressors will be installed within an acoustical enclosure. The pipeline will also be provided with isolation valves and vent valves to allow the pipeline and associated equipment to be depressurized for maintenance or repair.

5.3 NATURAL GAS REQUIREMENTS

Nominal full load fuel consumption will be 4,500 million British thermal units per hour (MMBtu/Hr), higher heating value (HHV). Total annual fuel consumption will be 19,570,000 million Btu (HHV), based on an anticipated 50 percent dispatch. Fuel consumed during startups and shutdowns is expected to be 265,000 million Btu (HHV), based on an anticipated total of 193 annual startup/shutdown events. The natural gas will be delivered to the site and routed from the new gas metering station area to the gas compression enclosure, where it will pass through compressors to reach the required operational pressure of approximately 600 pounds per square inch gauge. Three 3,200-horsepower gas compressors will operate when the gas pressure falls below the required operational pressure.

The natural gas will be further conditioned on site. The fuel gas compression scope will include inlet scrubbers, finfan gas coolers, and discharge coalescing filters. A final fuel filter will be installed at each combustion turbine.

The quality of the gas received from PG&E at the WPGS receipt point is summarized in Table 5-1.

5.4 PIPELINE CONSTRUCTION

The natural gas pipeline connection will be completed in time to support the startup and commissioning activities. Construction of the pipeline is considered in the overall construction schedule presented in Chapter 2. The pipeline workforce will consist of laborers, welders, equipment operators, supervisory personnel, and construction management personnel.

The new pipeline will be approximately 12-inch-diameter all welded steel pipe, installed and tested in accordance with ANSI B31.1 Power Piping Code. The final pipe size will be determined during detailed design. The underground portion of the pipeline will be coated with a fusion-bonded epoxy coating to protect the pipe from exterior corrosion. The total length of the onsite natural gas pipeline will be

approximately 2,700 feet. Approximately 2,620 feet of the pipeline will be constructed within the PPP, and 80 feet will be constructed through the WPGS site to the gas compressor station.

Construction staffing requirements for installation of the gas line are included in Table 2.7-1. Equipment required for installation of the gas line is included in Table 2.7-3. Equipment laydown will occur within the project construction laydown areas.

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Table 5-1
Natural Gas Analysis

Constituent Name	Volume %
Methane	95.050
Ethane	2.643
Nitrogen	1.091
Carbon Dioxide	0.664
Propane	0.345
n-Butane	0.064
Hexane	0.059
i-Butane	0.052
i-Pentane	0.018
n-Pentane	0.013
Total	100.00
Sulfur (grains per 100 scf)	1.0/0.40[2]
Higher Heating Value (Btu per ft^3)[1]	1,028.08

Source: Gas composition from PG&E.

Notes:
Btu: British thermal units, scf = standard cubic feet

[1] 60°F and 30 in. Hga
[2] Based on PG&E data: 1.0 is the short term maximum (up to 24 hours or daily) and 0.4 gr/100 scf is the long term (quarterly or annual average). http://www.pge.com/pipeline/operations/sulfur/sulfur_info.shtml