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3.1 ENERGY EFFICIENCY

The Project will use two GE LM6000 NxGen PD SPRINT gas turbine generators operating in simple cycle mode. The LM6000 engine is an aero-derivative combustion turbine designed for quick starting and achieving rated load within 10 minutes. Operating in simple cycle mode, the LM6000 is well suited for peaking operation.

The LM6000 combustion turbine generators will be fueled with natural gas and utilize a dry low NO_x combustion system. In addition, each LM6000 will also be equipped with a SPRINT power augmentation system that adds approximately 10 MW to the total plant capacity.

Though the plant is expected to operate at full load when in service, the plant is designed for part load operation. Similarly, given its peaking operation, the plant is also designed for cycling duty with multiple starts per day. One major economic benefit of the aero-derivative engine design is that unlike a framed style unit there is no maintenance penalty directly attributed to numerous start and stop cycles.

At the site, the LM6000 PD SPRINT can achieve a high efficiency of 37 percent at the annual average temperature of 72°F. After accounting for plant auxiliary loads such as the fuel gas compressor, and inlet air chiller, the plant's fuel utilization is 9,464 Btus per kilowatt-hour (Btu/Kwhr), or an efficiency of 36 percent at full load operation. Part load operations would result in slightly lower efficiencies. The LM6000 turbines will be equipped with inlet guide vanes to improve performance at part load.

