Exhibit No. 104
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Choosing the Right Type of Power Plant

When a utility needs to add to its production resources consideration is required for the power plant *type*. What follows is a discussion of the selection process in simplified form. While examples of Aquila's planning and operating characteristics are used, the intent is to demonstrate the process. The information provided does not necessarily reflect Aquila's specific resource planning information.

All power plants are designed to be cost effective within their expected range of utilization. The resource planner's job is to match the plant's utilization level with the expected customer load levels. So, before the need to choose a generator type occurs, an examination of the customer load is required.

Figure 1 shows a sample of the Aquila system loads for one day. The load varies due to the customer use changing throughout the day. In late evening and early morning the business and residential use is extremely low. During the day the load varies with customer needs like cooking and entertainment.

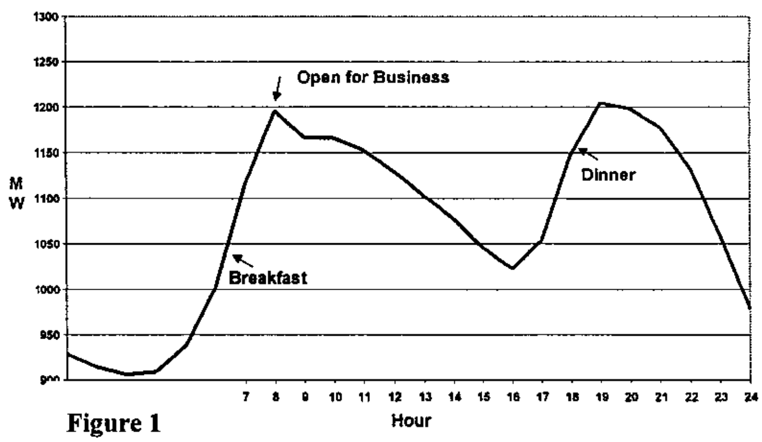

Figure 1

Aquila's generation resources have to be able to meet this changing load. It can be seen that at least 900 Mw or so of generation has to be available **most of the time** while an additional 300Mw or so is needed only **part of the time.**

Figure 2 shows how the load changes throughout a year. From viewing this graph it can be stated that 500 MW of generation is needed **most of the time,** an additional 400 Mw of generation is needed **some of the time,** and another 900 Mw of generation is needed a smaller **part of the time.**

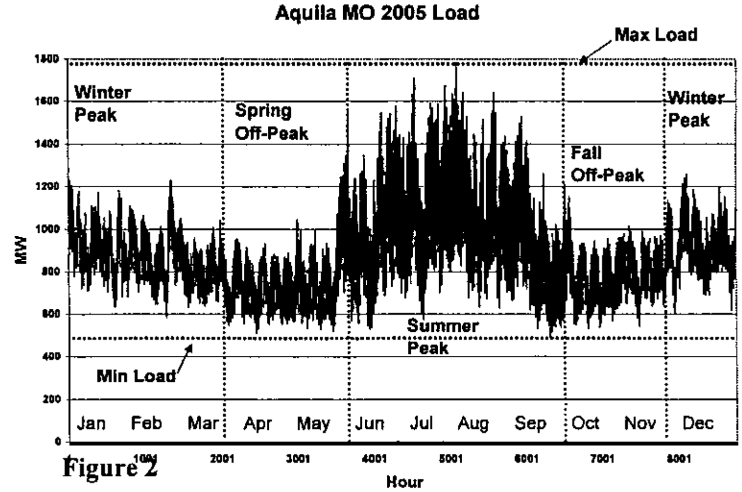

Figure 2

The bolded words above describe the basic design features of power plants. Plants built to operate **most of the time** are called **Base Load** plants. Plants built to operate **some of the time** are called **Intermediate** plants, while those that operate only a smaller **part of the time** are called **peaking** plants.

Base load plants have to be built stronger and more reliable to withstand constant operation. Complex power transfer systems (steam) drive up the construction price of base load plants but have the advantage of being very efficient in fuel usage.

Conversely, a peaking plant does not need to be built as efficient or as strong so it costs much less than a base load plant. Figure 3 below shows the characteristics of Base Load, Intermediate, and Peaking plants.

An intermediate plant can be viewed as a hybrid of peaking and base load plants. Some of its design takes advantage of peaking's lower construction costs while capturing some of the efficiency of a base load plant.

Resource Category	Example	Construction Cost	Energy Cost	Startup Cost/Time	Duration	Cycle
Base Load	Coal Fueled Steam	**High**	**Low**	**High Cost** - 15-24 Hours	Always On	Off for Maintenance only
Intermediate	Natural Gas FueledSteam or Combined Cycle (CC)	**Moderate** - One-fourth to one-half Base Load Cost	**Moderate** - Twice the cost of Base Load	**Moderate** / 4 Hours	Days	Weekly - Seasonal
Peaking	Natural Gas or Oil Fueled Combustion Turbine (CT)	**Low** - one-sixth to one third the cost of base load	**High** - Three to Six times base load	**Low** - One Hour	Hours	Daily

Figure 3 Characteristics of plant types

The amount of usage a power plant has during the year is called **Load Factor**. Load factor is determined by the percentage of output a plant delivers over a year. A plant at full load running every hour of the year has a capacity factor of 100%. A plant at half load running every hour of the year has the same capacity factor as a plant at full load running only half the hours of the year. Both have a capacity factor of 50%.

By examining the annual hourly loads, planners can determine the how much of each type of plant is needed to most economically meet the annual hourly loads.

Figure 4 below demonstrates the most economical ranges of capacity factors for the power plant types. It is a graph showing the annual cost of each kW the plant is able to produce. The cost is a combination of the fixed costs (similar to a mortgage cost) and variable cost (fuel).

As an example, if each of the plants did not run at all during the year, the least expensive one is the CT (peaking) since at 0% its line has the lowest $/kw/yr. Its lower construction cost determines its value.

If each of the plants were to operate at 20% the least expensive one is the CTCC (intermediate). The CTs much higher fuel costs leave it at a disadvantage when compared to the CTCC. The CTCC's moderate construction cost and moderate fuel

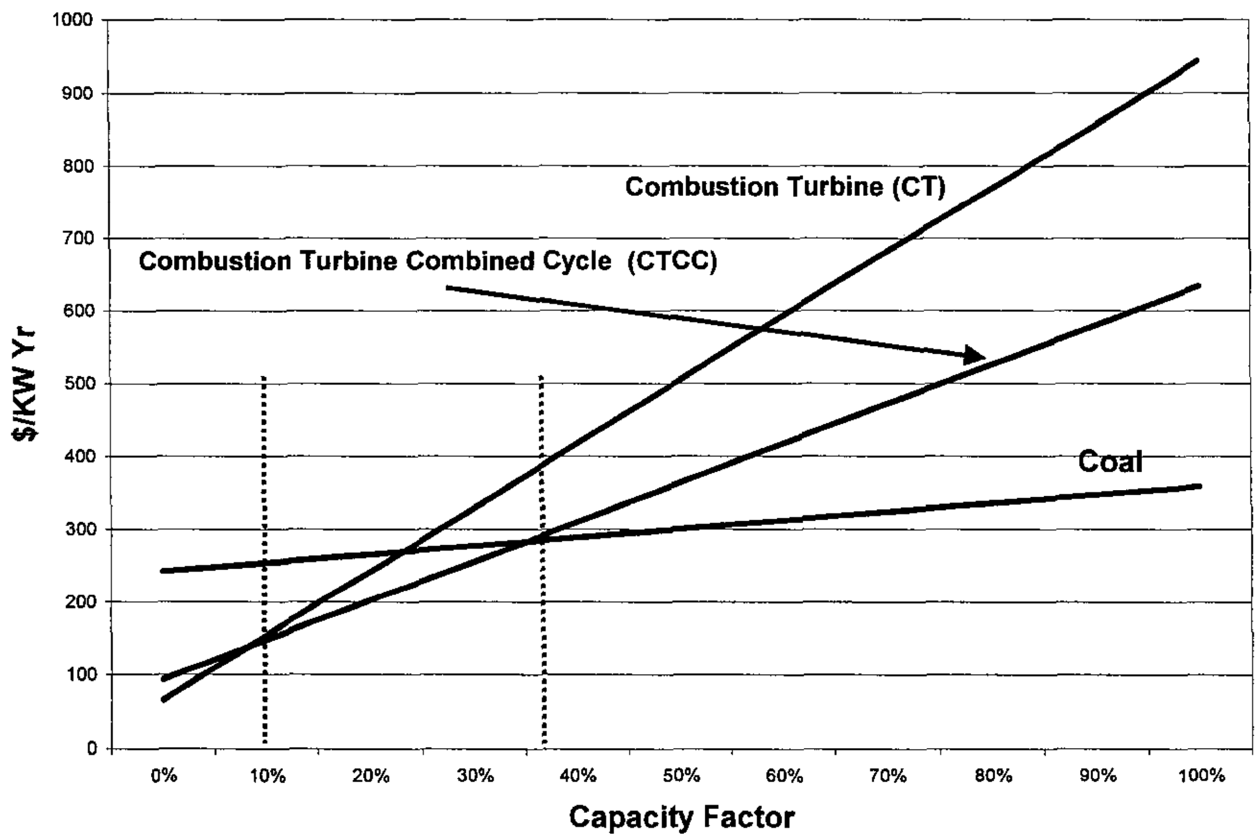

Figure 4 Best Capacity Factors of Power Plant Types

costs.
At 80% capacity factor the coal plant is the best value. The fixed costs that disadvantaged this plant at lower capacity factors are compensated by its very low fuel costs.

So if the need for a plant is for a small **part of the time** (less than 10%), a peaking plant is best.
If the need for a plant is **some of the time** (10-35%), an intermediate plant is required.
If the need for a plant is **most of the time** (more than 35%), a base load plant is best.