

Maximize Power Plant Production

The HydroAssistant is a Microsoft Excel application that allows operators to specify individual unit load points to maximize power plant production and minimize power plant discharge. The HydroAssistant works with a database of optimum plant outputs and associated unit load points that are derived from advanced heuristics. The database is easily sorted using the dialog box and will show each unit's setting thereby achieving minimum discharge for a given plant power. The accuracy of each unit's operating characteristics are vital to obtaining optimum production.



Theory of Operation

The units' operating characteristics are first obtained by simple field measurements. These field measurements should include:

- Pressure Head across entire power plant
- Unit Power
- Unit Discharge

Usually the upstream water level indicator and downstream water indicator are sufficient to determine the head. Typically, tests are performed at constant loads in several steps ranging from the minimum load to the maximum load while recording discharge, power and head as described above. Measurements are taken for each unit over the entire operating range of the unit. It is imperative that current data representative of the current operating characteristics is used.

Contact Rennasonic for details and assistance with these field measurements.

This data is sent to Rennasonic and individual models of each unit are created. Various techniques and heuristics are applied to the models to create a customized HydroAssistant.

An example of the HydroAssistant interface for a five unit plant with a 1300 record database is shown to the right. A chart maps the database by plant power, discharge, and efficiency. The database located below the chart, can be manually sorted.

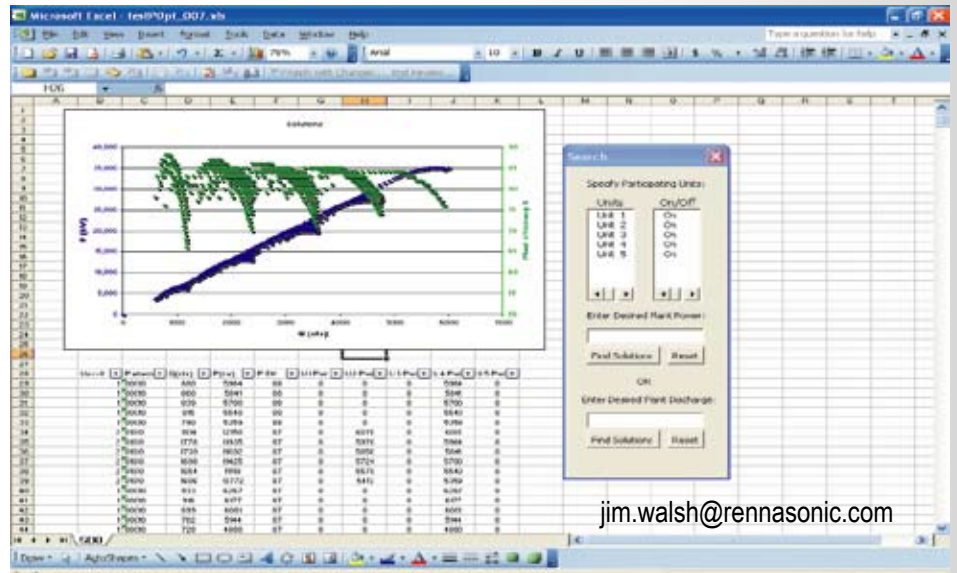
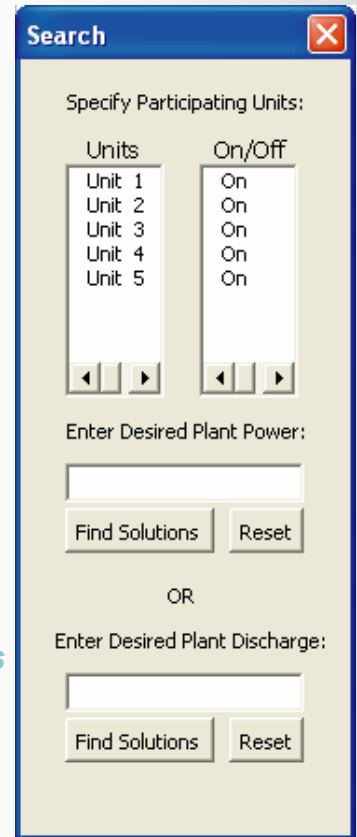
Custom configurations are available upon request. Please contact Rennasonic for more information.

Requirements

Microsoft Office 2000 platform running the Windows XP operating system is suggested. Consult Rennasonic Inc. for other configurations. The minimum hardware configuration to support Microsoft XP and Office 2003 is recommended.

Search Engine Dialog Box:

The search engine dialog box allows operators to enter a desired plant power or discharge in service and out of service units.



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