Bently Nevada* Hydro Turbine/Generator
Condition Monitoring and Diagnostics

This is an advanced online management and diagnostics software package for hydro turbines and generators. It is designed to work with the Bently Nevada hardware protection systems, collecting both static and dynamic high resolution data including: vibration, air gap, position, speed, temperature, and more. It provides data analysis and diagnostic capabilities specifically for hydro turbines and generators.

Reducing Operational Risk
In our current world of deregulated markets and changing environmental constraints, many hydro machines are no longer operating continuously at base load. More frequent speed and load changes introduce additional thermal, mechanical and electrical stresses; often these stresses were not anticipated in the initial design. Partial load operation usually means a departure from peak efficiency, and results in the machine having a greater exposure to the effects of rough load zone and cavitation. Implementing a properly engineered condition monitoring and diagnostic solution, such as the Bently Nevada Hydro Turbine/Generator package, enables the operator to better avoid operation in load zones where cavitation or vibration can cause premature damage. Better operational management of the machine reduces the risks caused by partial load and more frequent load cycling. This risk reduction is critical to operating in today’s dynamic environments.

Benefits
- Improved operational flexibility with better risk management
- Precise monitoring of any developing problem
- Early event detection
- Real-time condition status

Capabilities
- Specially designed GUI for hydro applications including polar display for generator rotor and stator shape
- Interface function with third party and aftermarket sensor suites like partial discharge analysis
- Can be digitally connected to any available network port for data transfer to System 1* server
- High resolution data acquisition
- Trending
- Sophisticated alarming
- Exception reporting
- User notification function
**Levels of Support**

Installation, training, and support services are recommended to help you achieve the most value from this application package. We offer 3 distinct levels of support that include the following:

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<th>Level</th>
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<tr>
<td>Bronze</td>
<td>24/7 Tech support from our outstanding team of professionals, the latest software upgrades available</td>
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**Install and Optimized Asset Operation with Decision Support**

Decision Support functionality, built into every application package, allows machinery engineers or other personnel to automate the analysis of machinery condition and configure targeted advisories of equipment degradation or malfunction. Rules derived from the experience of plant engineers and operators can be used to continuously evaluate equipment condition. Additionally, targeted RulePaks for many types of equipment are available, allowing for more rapid implementation of this critical functionality. Utilizing Decision Support enables machinery engineers to spend more of their time resolving problems and optimizing the operation of assets.

The notification functionality delivers timely alerts of abnormal operating conditions and impending failures to operators and others. These alerts can also include recommended corrective actions (customized to plant-specific operating procedures) in response to the condition identified by Decision Support.

**Better Economic Performance – The Ultimate Goal**

In today’s competitive environment, understanding and optimizing equipment performance is a critical component to achieving business success – particularly in asset intensive industries. Utilizing the functionality of advanced Condition Monitoring and Diagnostic products such as the Hydro Turbine/Generator package, optimizes the availability of critical production assets, allowing owners and operators to make better, information-based operational decisions and unleashing the power of the organization to focus on improving the profitability of the enterprise.

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For complete product specifications and ordering information:
- contact your local salesperson
- call 775-782-3611 and ask for “System 1” at the prompt
- e-mail us at system1info@ge.com
- visit our Web site at www.gepower.com/system1

* System 1, Bently Nevada, and Decision Support are trademarks of General Electric Company.

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