New Electric Power/Energy Data Control Systems

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UP until recently, the development of electric power technologies has been proliferating in Japan, supported by the increased demand for electric power that has accompanied the expansion of the country's GNP. These technologies include power generation from nuclear power plants like ABWRs, power generation from thermal power plants like combined-cycle gas-fired gas turbine power plants, and power transmission methods such as DC power transmission via the Kii Channel. This technology development has flourished with the investment and research put into major projects by electric utilities and the R&D work done by manufacturers in response.

On the other hand, there is great need for electric power throughout the world, as reflected by the increased demand for power bolstered by the current economic boom in North America. At the same time, the movement toward liberalization is accelerating throughout the world and the business environment surrounding the electric power industry is coming up against many problems. Moreover, the need for reducing CO_2 emissions to preserve the global environment has been recognized at the COP4 conference held in Buenos Aires.

In the midst of these changing circumstances, it is necessary to find a new direction for technology development, one that moves away from the past where the emphasis was on concentrating resources and expanding the size and scale of projects. To achieve this it will be necessary to consider how to simultaneously balance the use of energy sources, achieve harmony between humankind and the environment, and continue the prosperity we have enjoyed in the past.

With the expanded scale of automatic control, along with the deployment of control algorithms and improved human-machine interfaces, computer systems, which started as devices for monitoring operations and energy consumption in power generating stations, transformer stations, power supply stations, office buildings and factories, have come to be used in a wide variety of indispensable applications. A great deal of data and operating technology are amassed in these systems; likewise a great deal of data and system technology are amassed in the manufacturers that built them. If all of these can be linked over data networks, so that data, know-how and service can be mutually applied from the wide viewpoint of management resources, this will make it possible to further improve efficiency and solve a wide variety of problems. As the explosive growth of the Internet brings down the barriers that prevent systems from linking to other systems, system reliability is steadily improving with the spread of IT—greater speed, capacity and mobility—and the spread of firewalls and coding technology. This is making it possible to construct a great many new types of service systems.

All of this portends a new era for the future—one of new data control systems built through exchanges of data, knowledge and know-how.

Hitachi, Ltd. will continue working to provide data control systems that meet the requirements of this new era, using technologies acquired through the development and supply of information and control systems.