Electric Power and Energy Systems

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ALTHOUGH stable growth is expected in the medium to long term for the electric power and energy industries, change has become the normal state in the short term, leading to a severe business environment. Environmental problems, meanwhile, centered on efforts to prevent global warming, have led to demands for improved efficiency in existing power generation technology and for increased use of materials that reduce the burden on the environment, as well as demands for diversifying power sources by introducing renewable energy resources. Deregulation, meanwhile, is being promoted internationally in the form of the liberalization of electric power production and other measures. This has led to entrance into the market of new wholesale players such as IPPs (independent power producers) and PPSs (power producers and suppliers), resulting in intensified competition aimed at reducing overall electric production costs. In the meantime, recent advances seen in the IT (information technology) industry have brought about not only an expansion in the demand for electric power but also is creating business opportunities in new service areas, such as the operation and management of various electrical equipment and the marketing (trading) of electric power.

Hitachi, Ltd. is energetically conducting R&D (research and development) to respond to changes in the business environment and to meet diversified needs in the marketplace. Besides developing highly efficient core products, various types of dispersed electric power supply units, and various types of information & control systems, Hitachi utilizes IT to create new service businesses as new products are commercialized.

As a reflection of recent developments in computer technology and information/communications technology, information & control systems offering both reduced costs and high reliability are in particular demand. In response to this demand in the area of electric power data control systems, Hitachi is utilizing open hardware and operating systems that meet international standards to provide configurations with improved reliability based on middleware. The operability of supervisory and control systems for electric power plants, meanwhile, has been improved further by digitalizing the systems based on PCMs (programmable control modules). Equipment has been rationalized, moreover, through the use of intelligent PI/O (process input and output) and RTBs (remote terminal blocks). As a result, the overall scope of automation has been expanded further.

The articles in this special issue discuss the increased efficiency of core products and introduce leading-edge technology for information & control systems.

As your Best Solutions Partner in the areas of electric power and energy, supporting your basic infrastructure, Hitachi, Ltd. will continue to forecast accurately changes in market needs and respond flexibly to diversified needs as it provides the market with a wide variety of products.