



KOMAE Area



Light for Tomorrow.

The Komae Area : A Retrospective

The Central Research Institute of Electric Power Industry (CRIEPI) was founded in 1951 in Komae as a joint research institute to serve the electric power industry. The Komae Area has since been utilizing its research results to contribute to the industry's growth for over 70 years, spanning from a time known as *suishu-kajū*—when Japan's power production was driven by hydropower and supplemented by thermal power—through the country's high economic growth period until today. In addition to stably providing power, the Komae Area has worked to develop technologies that cater to the demands of the times, such as environmental protection, energy conservation, and grid interconnection of renewable energy.

The Komae Area has relocated its civil engineering and combustion technology among some other divisions to different premises, responding to changes in the surrounding environment and developments in research. In recent years, its research division moved to the Yokosuka Area—a site reinforced as a base for energy industrial technology research—and the Komae Area's land was partially sold off. Regardless, the area will continue to contribute broadly to society through energy technology by conducting research that utilizes an electric power system simulator and other large testing equipment, and by providing technical training and other efforts that capitalize on the site's proximity to central Tokyo.



Front entrance of CRIEPI, Komae Area, circa 1954

Yasuzaeon Matsunaga

1875-1971

As a businessman, Matsunaga dedicated himself to promoting electric power in Japan and drove the sector's privatization (launch of nine-utility system) in the postwar era. He enforced a major electricity rate hike in 1952, which earned him the nicknames "king of electric power" (*denryoku-ō*) and "demon of electric power" (*denryoku no oni*). He established what today became CRIEPI, believing that a single research institute should comprehensively and efficiently address common issues of the electricity industry.



Photo by Kira Sugiyama

1947



1947: Area of future CRIEPI site, used as Nippon Hassōden's hydroelectric testing center at the time. Photo by US Army.

1961



1961: Aerial photo

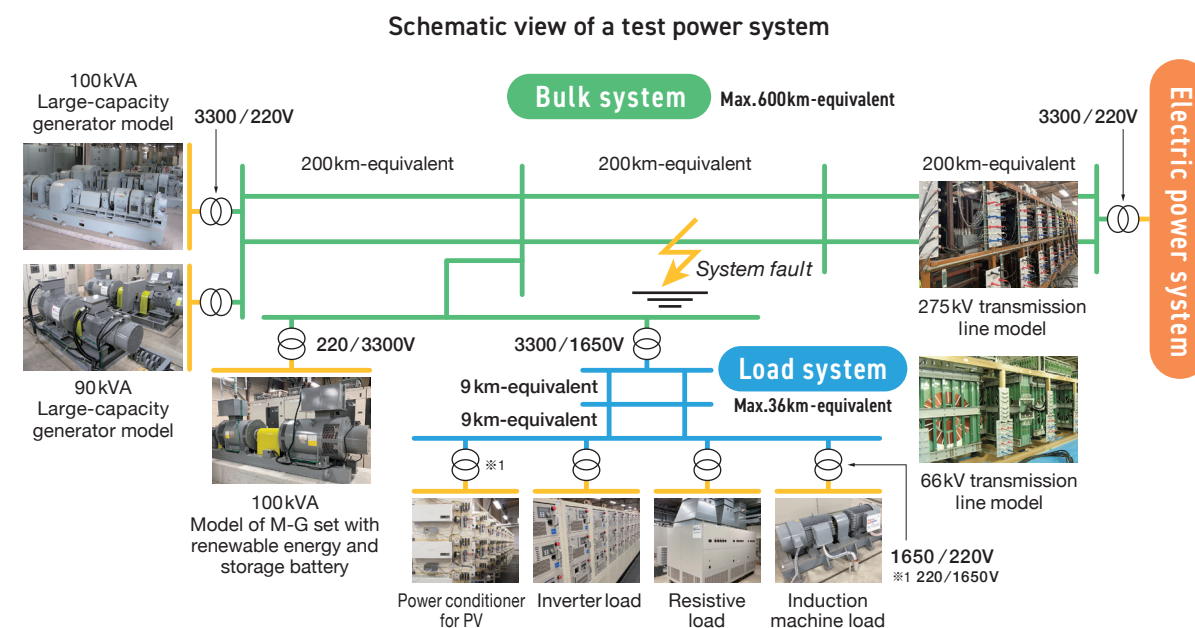
2024



2024: Aerial photo

The Komae Area's Primary Research Facility

Analog electric power system simulator



This analog electric power system simulator utilizes scaled-down models to simulate the characteristics of both bulk and local power systems. The simulator is used to analyze system behavior under various events, including system faults. Additionally, the simulator is used to identify the characteristics of power system components, such as photovoltaic (PV) generation system, by measuring electric power, voltage, current, frequency and so forth under different conditions. Based on knowledge obtained, numerical simulation models are developed for CPAT.*2

*2 CPAT: An integrated software package developed by CRIEPI. It enables highly accurate power system simulations that properly take into consideration the detailed characteristics of various components.

Application of international standard (IEC 61850) to systems in substations and power plants



Verification equipment of IEC 61850-compliant substation system



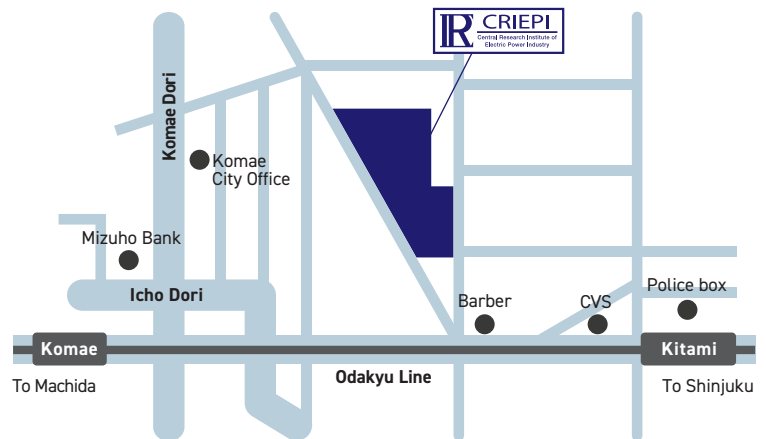
Interoperability test of IEC 61850-compliant devices made by different manufacturers

For devices and systems of protection, monitoring and control, and measurement in substations and power plants, the application of IEC 61850—an international standard aimed at enhancing equipment and construction efficiency and expanding procurement options—is being considered to standardize specifications across utilities. CRIEPI is promoting the adoption of IEC 61850 in substation and power plant systems both inside and outside Japan, by developing an IEC 61850-based function specification that enables the implementation of functions domestically required, reflecting them in international standards, and conducting interoperability tests using IEC 61850-compliant equipment from both Japanese and overseas manufacturers.

History

- 1943** Establishment of the Nippon Hassōden hydroelectric laboratory, CRIEPI's predecessor
- 1951** Launch of the Electric Power Engineering Research Laboratory as the electric power industry's central research agency
- 1952** Addition of an economic research division, and change of agency's name to the Central Research Institute of Electric Power Industry
- 1970** Relocation of the civil engineering research division to the Abiko Area
- 1983** Establishment of the Nuclear Information Center (terminated after transferring operations to the Japan Nuclear Technology Institute in 2005)
- 1987** Establishment of the Human Factors Research Center (currently part of the Nuclear Risk Research Center)
- 1993** Establishment of the Information Laboratory (currently part of the Grid Innovation Research Laboratory)
- 1997** Establishment of the Business Center (Expansion of operation and change of name to Business Support Center in 2006; merger with the Head Office and launch of the Procurement Center in 2015)
- 2000** Establishment of the Low Dose Radiation Research Center
- 2004** Reorganization into eight specialized laboratories
- 2006** Establishment of Center for Intellectual Property and Technology Licensing (integrated into Planning Group in 2015)
- 2012** Transition into a general incorporated foundation
- 2014** Establishment of the Nuclear Risk Research Center
- 2016** Establishment of the Energy Innovation Center
- 2017** Relocation of the Energy Innovation Center, the Nuclear Technology Research Laboratory, and the System Engineering Research Laboratory to Yokosuka Area
- 2021** New Establishment of three Research Laboratories and reorganization of the institute's research system
- 2023** Relocation of the Radiation Safety Unit to the Abiko Area

Access



Approximately a 7 minute walk from Kitami Station on the Odakyu Line.
 *Approximately 25 minutes from Shinjuku Station to Kitami Station on the Odakyu Line.
 (Transfer to the local train at Seijogakuen-mae Station. Rapid express trains do not stop at the Seijogakuen-mae Station.)

Central Research Institute of Electric Power Industry

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CRIEPI Search

