Relationships with Customers and Suppliers

Social Requirements

- Increasing importance of product quality and management quality
- Expanse of the reliable and safety needs in the social infrastructure

The FDK Approach

- FDK Group will take advantage of ecosystems to increase the value of offerings provided together with various partners to enable customers to utilize electric energy in diversified ways.

Highlights of Relationships with Customers and Suppliers

Number of public announcements regarding products in FY2020	Number of ISO 9001-certified production sites	Number of IATF16949-certified production sites	Number of ISO 14001-certified production sites
8	7	4	7

Initiatives Supporting Relationships with Customers and Suppliers

As a Smart Energy Partner that assembles advanced technologies, the FDK Group would like our customers to best utilize electric energy in a safe and efficient manner, and it hopes to contribute to the materialization and development of a sustainable society. This vision will help to resolve social issues through the products and services provided by the FDK Group.

Our offerings enable reliable applications for clean and safe electric energy to corporate and individual users that support people's lifestyles.

Basic Concept

The FDK Group strives to build product development, supply, and quality assurance systems that help resolve social issues, and we work to promote green procurement based on concepts for continually developing and supplying high-quality, safe, environmentally friendly batteries and electronic devices able to satisfy customers.

Examples of Initiatives

FDK Group Initiatives

The FDK Group strives to provide batteries and electronic devices that use environmentally friendly materials by complying with environmental laws and regulations to heighten our value as a company cultivating the future. As part of these measures, the FDK Group works to develop new products, including a next generation of batteries able to provide customers with new added value derived from the distinct technology cultivated in the battery and electronic device businesses thus far.

Examples of new product launches in FY2020 (excerpt)

Example 1

Release of BBUS-122024-02, a DC24V nickel-metal hydride battery system for transportation infrastructure and industrial applications

Our users' expectations

- Reduce replacement costs by using rectifiers taken directly from existing outdoor equipment.
- Increase battery capacity in the current battery installation space and extend the working hours for night maintenance.
- Reduce degradation of battery discharge capacity in the low-temperature environment of winter.
- Conduct remote monitoring for signs of battery degradation and implement systematic battery replacement before the batteries reach the end of their life.
- Features of the new product:
- Easier replacement achieved by control that incorporates the charging and discharging behavior of lead-acid batteries.
- Small size and parallel connection capabilities (34% reduction in volume and 48% reduction in mass compared to equivalent lead-acid batteries*, according to our research)
- Equipped with nickel-metal hydride batteries with good low-temperature discharge characteristics
- Equipped with monitoring and communication functions

DC24V Nickel-Metal Hydride Battery System BBUS-122024-02

Example 2

Release of the FUJITSU alkaline battery, "Long Life PLUS."

Features

The use of rare metal coating technology in the cathode case suppresses increases in internal resistance due to oxidation and outflow of impurities from the inside of the battery, resulting in improved discharge performance and leakage resistance after long-term storage, long-term storage of ten years—approximately double that of conventional products. This is a new standard for alkaline batteries that combines discharge performance suitable for medium- and low-current devices with a long-term storage performance of ten years, providing excellent value for the money and making it suitable for use in all aspects of daily life. In addition, this product complies with the Act of Promoting Green Procurement, while the backing paper for the multi-packs and blister packs is made of environmentally friendly FSC-certified paper.

FUJITSU Alkaline Battery, "Long Life Plus"

Example 3

Expansion of production capacity for high-power, cylindrical lithium-manganese dioxide primary batteries (25% increase in production capacity)

We will expand the assembly line for high-power, cylindrical lithium-manganese dioxide primary batteries, which are in increasing demand in the meter communication market, in order to increase production capacity by 25%.

Our high-power, cylindrical lithium-manganese dioxide primary batteries are mainly used in electronic meters for gas, electricity, and water. As a result of the recent trend toward smart devices with increased communication traffic volume, demand is increasing for lithium batteries that can discharge a large amount of current during operation. The batteries are also used in fire alarms, medical devices, in-vehicle equipment, etc. Even the COVID-19 pandemic has not slowed demand, and we expect orders to continue to increase. Given these market conditions, we will expand the assembly line at the Tottori Plant, where we manufacture our lithium batteries, and increase its production capacity by 25% starting in April 2021. In parallel with this expansion of the assembly line, the strengths of the existing assembly line were retained and the points that needed to be improved were thoroughly reviewed. In addition to designing equipment to maximize battery performance, quality, and productivity, we will also adopt a line configuration that is designed with the development of an IoT-based smart factory in mind, including the establishment of a traceability system, thereby allowing us to deal with increases in orders.

Left: High-power, cylindrical lithium-manganese dioxide primary battery
Right: The Tottori Plant

New Addition of Research and Development Content to Our Website

We have been researching and developing batteries for over 70 years since our founding in 1950, starting with manganese dry cell batteries and continuing with alkaline and lithium batteries and more. With the addition of nickel-metal hydride batteries in 2010, we have broadened the scope of our research and development on batteries, and our knowledge and expertise in this area has grown deeper.

More recently, our research and development efforts have resulted in the development of new batteries, including all-solid-state batteries and metal-hydride/air secondary batteries. We would like to publicize our technical capabilities and products to our customers and other stakeholders by showcasing our technologies and examples of our R&D activities on our website.

URL for added research and development content:
https://www.fdk.co.jp/research-and-development/

Relationships with Customers and Suppliers

FY2020 Achievements

- Ni-MH batteries
  FDK strove to develop and supply a variety of Ni-MH batteries for household electronics, in-vehicle accessories, power back-up systems, and products for mobility and social infrastructure.
- Alkaline batteries
  FDK worked to develop products with high performance and high reliability. We also supplied environmentally friendly products.
- Lithium batteries
  FDK worked to develop products for the residential alarm, in-vehicle, and AED markets. We have also developed a high-power, cylindrical lithium-manganese dioxide primary battery with the highest capacity in the industry.
- Electronic devices
  FDK strove to propose and develop smaller and lighter electronic devices for its customers. We also worked to develop sensing and wireless products.
- All-solid-state batteries
  Started production of SoLiCellTM, a small, all-solid-state SMD battery, at our Kosai Plant. (December 2020)
- Research and development
  Developed a metal-hydride/air secondary battery, one type of next-generation battery for large-scale power storage. (November 2020)

Development with Considerations for Quality and Safety

FDK Group Quality Policy

"We will provide customers with quality they can rely on."

Philosophy

Our mission is to develop and supply high-quality, safe, and environmentally friendly products that satisfy customers through a basic quality-first approach. The FDK Group knows it must never cause any grave quality issues or violate the laws or regulations of each country worldwide.

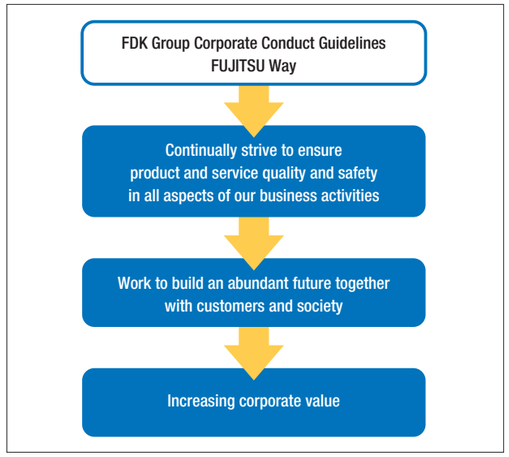
Therefore, every department takes customer-oriented actions throughout each step from sales to research, planning, development, design, production and even customer service to provide more precise quality management.

Quality Action Guidelines

1. We will make quality requests from customers our highest priority and take swift pertinent action to heighten customer satisfaction.
2. We will strengthen fundamental activities in the development stage and incorporate quality, price, delivery, and environmental considerations into production to help prevent quality issues at the production stage, improve profitability, strictly adhere to delivery dates, and improve environmental performance.
3. We will continually enhance risk management throughout various aspects of compliance from product safety to the chemical substances contained in products.
4. We will improve manufacturing to thoroughly reduce any loss of quality, such as process waste and losses from complaints.
5. We will continually improve the quality management system to execute more effective quality management.

Quality Assurance System

The FDK Group has built a quality management system to achieve the Quality Policy and Quality Action Guidelines and will always undertake quality assurance activities. As of March 2021, eight of our sites, including those overseas, have acquired ISO 9001 certification, and four have acquired IATF 16949 certification.



Quality Assurance Initiatives

In order to provide quality products and services that satisfy the function and performance requirements as well as other customer needs, FDK fosters cooperation between management and other various departments. This necessitates the participation of every employee in activities across every process of its corporate activities.

The FDK Group engages in collaborative activities linked to those of each business site, including those overseas, across a diverse product line-up.

Quality assurance divisions actively work to share information with all business divisions to drive these activities, formulate quality proposals, escalate responses in the event of problems and quality issues related to compliance, conduct education to nurture human resources, and horizontally share other information such as expertise and examples of defects. FDK has established a Group-wide Quality Management Committees hosted by top management to approach quality management from a Group-wide management perspective.

Improvement Processes of Actions to Strengthen Quality Assurance

1. In order to implement the FDK Group's quality policy, each verification process, from product planning to mass production transfer, is reviewed in accordance with quality-related regulations, etc., drawing on a wide range of knowledge not only from the department itself but also from other related departments, thereby ensuring more objective assessment.

2. Green Procurement Initiatives
   The FDK Group contributes to the materialization of a more sustainable society by conducting business activities that consider the environmental burden and supply environmentally friendly products. The FDK Group provides environmentally friendly products to customers by procuring and using eco-friendly materials based on the FDK Group Green Procurement Standards.

Quality Assurance System

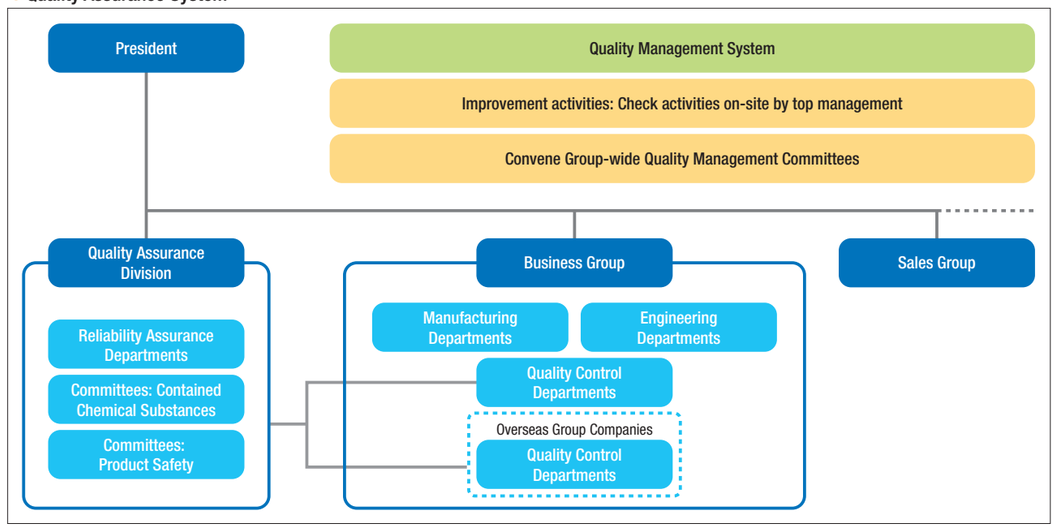


Chart of Each Quality Assurance Verification Process