

Ensuring Quality and Safety

Policy

To realize our founding philosophy of “Better Products, Better Services,” we have implemented a steady stream of initiatives aimed at improving quality. These include the introduction of quality control, zero defect (ZD) movement,*¹ a quality strategy,*² and software quality control*³ (SWQC).

As a Social Value Innovator, we hope that all employees will continue to improve the quality of their own work, the products they create, and the services they provide, and that customers will favor NEC as the provider of trusted “NEC Quality.”

Specifically, we have set up the Quality and Safety Action Policy, and we are conducting activities such as complying with quality and safety laws and regulations, improving safe, reliable technologies, standardizing key components, sharing expertise, and taking steps to prevent defects and recurring issues.

*1 Activities designed to stimulate each employee's autonomy and passion to eliminate defects from their work through creative thinking, cost reductions, and improvements in quality and service

*2 An initiative to achieve Companywide improvement in the 7 Qs denoting quality in 1) management, 2) products and services, 3) human behavior, 4) workplace environment, 5) relationships with the local community, 6) business results, and 7) corporate image

*3 Software Quality Control

We have defined our “Quality and Safety Philosophy” and “Action Guidelines” as follows to enforce our initiatives.

Quality and Safety Philosophy

NEC strives to continue improving quality and safety based on the Principles in the NEC Way, including the founding spirit of “Better Products, Better Services.”

Action Guidelines

1. Quality management

1. Think and act from the standpoint of new value for customers and society
2. Maintain and enhance the NEC brand
3. Ensure that each member of NEC recognizes the importance of quality and strives to deliver better quality
4. Strive to ensure product and service quality, and comply with related laws and regulations
5. Make sincere efforts to address product and service quality problems

2. Safety management

1. Ensure that each member of NEC recognizes the importance of product and service safety
2. Strive to ensure product and service safety, and comply with related laws and regulations
3. Make sincere efforts to address product and service safety problems

Throughout the Company, construction work is stringently managed to ensure compliance with the Construction Industry Act, the Industrial Safety and Health Act, and other laws. Also, our philosophy is to advance OH&S and ensure that we provide customers with social value by establishing a compliance and OH&S culture at construction sites. With this in mind, we have set out the following action guidelines.

Code of Conduct for Health and Safety in Construction

1. We shall ensure that each person checks and endeavors to improve the soundness of construction work.
2. We shall advance compliance with laws and regulations, conduct education and personnel development, implement awareness-raising activities, and ensure Companywide understanding of the importance of occupational health and safety.
3. We shall maintain and improve the occupational health and safety management system and move forward through a plan-do-check-act (PDCA) cycle.
4. We shall preempt legal, safety, and quality issues by conducting monitoring and correction in relation to compliance with laws and regulations and occupational health and safety activities.
5. We shall preempt legal, safety, and quality issues by implementing risk assessments.
6. We shall increase motivation with respect to occupational health and safety through safety conventions and other measures.
7. We shall respond sincerely to legal, safety, and quality issues that arise.
8. We shall collect information on potential and actual legal, safety, and quality issues and endeavor to preempt issues or prevent their recurrence.

Implementation Framework

Quality & Safety Implementation Framework and Quality & Safety Risk Management Framework

One of the most important management issues is how to ensure quality and safety and deal with related risks in products, systems, and services.

NEC is working to clarify a range of actions for this system by defining Companywide rules and standard operating procedures, and to improve quality and safety. This effort is headed by the Environment and Total Quality Management Department and the Total Quality Management departments set up in business units and at consolidated subsidiaries, and the quality/safety management officers appointed in each of the business departments and at consolidated subsidiaries under the business units.

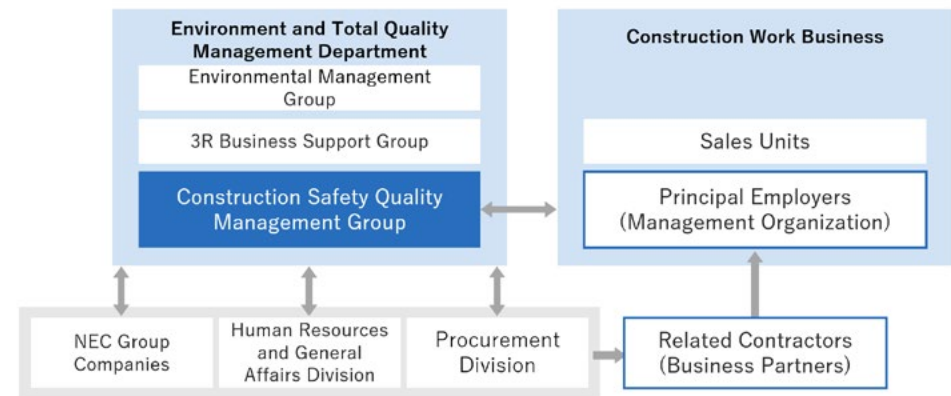
In regard to risk management related to quality and safety, we have built a Companywide framework and ensure that it is thoroughly implemented. If a customer's system or critical social system were to experience serious trouble, or a major product incident or infringement of technology laws and regulations were to occur, the matter would be fast-tracked to management. The business department in charge and specialist staff confer and reach a swift decision on how the customer should be treated, the response of those in authority, and whatever other PR measures might be appropriate. The consultations are swift and decisions are made concerning the most appropriate overall policy.

Ensuring the Soundness of Construction Work

As a Social Value Innovator, NEC garners trust and helps make society more convenient by ensuring the health and safety of workers and by installing NEC-developed products and systems safely and in compliance with relevant laws and regulations.

With a strong awareness of the priority of OH&S in all work, personnel engaged in construction work, all NEC employees, and related workers deliver outstanding technology to build a rich, safe society that offers peace of mind. Moreover, we constantly evolve how we achieve installation that is safe and compliant with relevant laws and regulations. In these ways, NEC ensures the soundness of construction work.

System for Compliance and OH&S in Construction Work



Measures and Main Fiscal 2022 Activities

■ Thorough Compliance for Quality and Safety

Compliance with Relevant Laws and Regulations

To visualize the technical laws and regulations with which NEC products must comply, NEC developed a “map of technology laws and regulations” to make it easier to identify what kind of laws and regulations are applied to which departments’ products. By using this map, we strive to comply with those technical laws and regulations by precisely conforming with various countries’ domestic laws and regulations, including Japan’s Electrical Appliances and Materials Safety Act, Radio Act, and Telecommunications Business Act.

NEC is enforcing compliance with relevant acts and internal rules for indications and labels for the quality and safety of its products and services. If violations are found or suspected, NEC will properly address the problem by following the direction of the relevant ministries and agencies. We also keep up to date our knowledge of technology laws and regulations in advanced technology and new business domains.

In fiscal 2022, there were no regulatory violations subject to fines or punishments with regard to the quality and safety of our products and services.

Ensuring Product Safety

NEC complies with the international standards IEC 60950-1 (JIS C 6950-1)/IEC 62368-1 (JIS C 62368-1) as a matter of course. In addition, we have established our own Group safety standards to reinforce these standards, and we also perform risk assessments to ensure product safety.

If product safety issues arise, we provide information on the NEC website and swiftly notify our customers.

■ Quality Management System

Today, as society’s focus shifts from manufacturing physical products to creating intangible services, quality controls are also changing. At NEC, we have created quality management systems that we implement to realize high-quality products and services that satisfy customers’ demands and expectations. In line with our basic stance that “quality is built in through processes,” we aim to make continuous improvements to make our processes even better.

Pre-project Assessment

Before embarking upon a new project, we identify the risks involved in executing it and check that sufficient risk countermeasures are in place. In addition to credit risk and contract risk, we consider the OH&S risk of those implementing the project.

Guidelines to Quality Assurance for Machine Learning-based Artificial Intelligence

The past few years have seen the proliferation of systems and services that use artificial intelligence (AI). However, the AI models that produce their analysis results can be difficult for humans to interpret, and traditional software quality assurance guidelines alone may not be sufficient.

Accordingly, in April 2019 NEC addressed this issue by formulating Guidelines to Quality Assurance for Machine Learning-based Artificial Intelligence, which are designed to ensure the quality of AI systems that cannot be covered by traditional software quality assurance alone. We have applied these guidelines to the design and development of important AI systems. While continuing with scheduled upgrades, we aim to increase the sophistication of the latest models to improve AI security and ensure that issues related to AI and human rights are verified.

Medical and Healthcare Fields

NEC Ethical Review Committee for the Life Sciences	NEC Corporation carries out R&D for commercialization in the life science field. • When acquiring people or information and data related to people for trial experiments and research, we follow the guidelines set out by the Ministry of Education, Culture, Sports, Science and Technology, and hold deliberations in the NEC Ethical Review Committee for the Life Sciences, made up of external experts.
Initiatives to ensure transparency in relationships with medical institutions	• NEC ensures the transparency and soundness of its relationships with medical institutions with a view to gaining widespread understanding of the medical device industry’s contribution to the development of life sciences as well as the high ethical standards that the Company adheres to in conducting corporate activities.
Initiatives in the medical and healthcare fields	• We are establishing a management system and moving forward with activities for quality management systems and compliance with relevant laws and regulations, aiming to establish commercial businesses in the medical and healthcare fields. • Regarding relevant laws and regulations, for the Pharmaceuticals and Medical Devices Act ^{*4} we have prepared guidelines on compliant advertisement and a checklist for determining which items are covered by the act. Moreover, we have incorporated the guidelines and checklist into the processes of related business entities. • We have begun establishing and managing processes pursuant to the Quality Management System Ordinance and ISO 13485:2016. • In tandem with these efforts, we are steadily establishing compliance with respective countries’ medical device-related laws, such as Japan’s Pharmaceuticals and Medical Devices Act as well as the European Union’s Medical Devices Directive and Medical Devices Regulation.

^{*4} Act on Securing Quality, Efficacy and Safety of Products Including Pharmaceuticals and Medical Devices

■ Human Resource Development

We believe that developing human resources and improving their skills are extremely important to improve the safety and quality of our products.

Developing personnel who realize safety and security	• NEC conducts training programs for specific jobs and fields of specialization with the aims of improving practical design and construction skills and providing basic and specialist knowledge on quality and safety management standards as well as technical standards. • In our “Safety Review Workshops,” which is one of the aforementioned specialized programs on product safety, we use actual devices to provide practical training on the incorporation of safety into designs. Thanks to this program, we have fostered numerous specialists in safety technology.
Project Management Award	• NEC holds an annual presentation of outstanding cases and presents a project management award to the organization or group that demonstrated the best project support, or project team that tackled a difficult project and achieved a particularly outstanding result. • The intent of the Project Management Award is to raise awareness of the importance of project management among all NEC Group employees and to demonstrate the significance of accomplishment and recovery in those projects that have a high level of risk. • NEC also recognizes that the increasing awareness of award-winning cases throughout the Group helps to prevent risks from materializing in new projects through the horizontal spread of risk management practices.
Increasing awareness of quality through “Quality Month” activities	• In November, which we have designated “Quality Month,” members of senior management and experts from inside and outside the Company conduct seminars and dialogues aimed at ensuring that employees are always highly conscious of quality and safety as they work. • In fiscal 2022, we raised employees’ awareness of quality assurance activities with examples of in-house case studies and panel discussions comprising AI experts and quality professionals from each business unit.

■ Construction Work Project Management

We strive to prevent occupational injuries and to improve health and safety standards through our Occupational Health and Safety Management System. In particular, using our construction work project management system, we have achieved 100% implementation of risk assessments and fixed-term Industrial Accident Compensation Insurance. There were no serious occupational accidents in fiscal 2022.