# KIWAMERU Excel — Pursuing "extreme safety levels" —Building a railway capable of withstanding natural disasters

**When the Great East Japan Earthquake occurred, the earthquake countermeasures steadily implemented by JR East until then proved effective to a great extent. However, the earthquake also revealed issues that we must address to ensure a higher level of safety. Based on this experience, we have worked to implement earthquake countermeasures in preparation for events that are conceivable such as an earthquake directly beneath the Tokyo metropolitan area, focusing on both tangible and intangible aspects. In these ways, we are working to build a railway capable of withstanding natural disasters.**

**We are also further promoting initiatives to prevent train collision, derailment accidents and rail crossing accidents. At the same time, we are taking steps to install automatic platform gates for the Yamanote Line and exploring the possibility of installation for other lines. In these and other ways, we continue to promote the development of railways that passenger can utilize reliability. We will also bolster activities aimed at achieving "extreme safety levels." For example, we will steadily make progress on initiatives based on 2013 Safety Vision, while formulating our next medium-term safety plan.**

**Pursuit of safety measures can never end. We will continue to tirelessly work to improve safety by pursuing a goal of "zero accidents involving passenger injuries or fatalities and zero accidents involving employee fatalities (including employees of Group companies and partner companies)."**


## ① Responding to major earthquakes

### a) Promotion of seismic reinforcement and other countermeasures for the earthquake

***(Seismic reinforcement and other countermeasures at a total cost of approximately ¥300 billion)***

We will now promote seismic reinforcement and other countermeasures against a possible earthquake directly beneath the Tokyo metropolitan area, as well as the possible Tokai Earthquake and other major earthquakes in Japan at a total cost of approximately ¥300 billion, positioning the next five-year period (from FY2013 to FY2017) as an intensive implementation period. Through these countermeasures, we will endeavor to build a railway capable of withstanding natural disasters.

- To prepare for a possible earthquake directly beneath the Tokyo metropolitan area, we will conduct seismic reinforcement of embankments, cutouts, brick arch viaducts, electrical poles and other infrastructure. In addition, we will implement station/platform ceiling and wall collapse prevention countermeasures, among other initiatives. We will also accelerate measures such as seismic reinforcement of viaduct columns, which we had been implementing on an ongoing basis.
- Based on experience derived from the Great East Japan Earthquake, we will proceed with the seismic reinforcement of train station buildings serving more than 3,000 passengers per day, along with the seismic reinforcement of Shinkansen electrical poles, particularly in the Sendai area.
- We will work to enhance emergency communications functions in the event of an earthquake. Countermeasures include increasing the communications speed for seismometer measurement data, and upgrading backup power supplies for the communications network.

***(Addressing remaining risks)***

Considering the status of damage projections and disaster preparedness plans of national and local governments, we will strive to monitor any additional remaining risks while actively taking steps to mitigate those risks.

### b) Rescuing customers and saving lives in the event of a disaster

***(Responses in the event of an earthquake)***

We will install necessary equipment and provide training to employees, to ensure that rescuing customers and saving lives are our top priority in the event of an earthquake. In addition, we will take steps to assist people who have difficulty returning home, such as by securing temporary shelter within train stations and stockpiling supplies.

***(Guiding tsunami evacuations)***

We will enhance employees' ability to respond to tsunamis through regular training and drills using a Tsunami Response Manual (our manual for employees in the event tsunamis are anticipated), which stipulates such matters as areas in danger of tsunami, and operating restrictions and methods when tsunamis are anticipated. Having understood the manual, employees will autonomously make decisions and take action in response to situations that cannot be addressed solely by the manual. Their actions and decisions will be based on the Tsunami Evacuation Principles, which we established following the Great East Japan Earthquake.

## ② Responses to natural disasters and extreme weather events

We will continue to make the necessary capital expenditures to address natural disasters and extreme weather events, such as torrential rain, wind gusts and lightning, which have been increasing recently. Measures will include capital expenditures to upgrade facilities in vulnerable sites. Also, we will upgrade our observation system and develop new technologies, with the aim of achieving even higher levels of safety.

## ③ Automatic platform gates

We will accelerate the installation of automatic platform gates for the Yamanote Line as a safety measure for station platforms. By FY2016, automatic platform gates will steadily enter service at 23 stations, excluding stations where major renovations are scheduled. For routes other than the Yamanote Line, we plan to install automatic platform gates mainly at stations used frequently by visually challenged customers, while discussing these matters with the relevant organizations.

## ④ Promoting measures to prevent train collision and derailment accidents

Our goal is to eradicate preventable accidents by further upgrading railway operation and maintenance systems. As part of measures to prevent train collision and derailment accidents, we will continue to install ATS-P and ATS-Ps (automatic train-stop systems), along with taking steps to prevent rail crossing accidents.

Also, in order to minimize human error, we will simplify both the tangible and intangible aspects of our operations. Examples include refining the number of various handling rules and standardizing the specification of equipment and devices.

## ⑤ Upgrading systems and structures to ensure safety

We will enhance the ability of every employee responsible for safety and the organization as a whole by having employees discuss frank opinions regarding hidden causes of potential accidents and safety vulnerabilities. At the same time, we will learn from past accidents and the examples of other companies. In addition, we will continue to constantly pursue the optimal safety management system for the Group as a whole, while continuously implementing training and drills designed to increase and maintain an awareness of safety.