

# Just Over a Year Since the Great East Japan Earthquake —KHI Group Activities—

The Great East Japan Earthquake prompted us, once again, to rethink our mission and reassess our own objectives as a corporate group. It is just over a year since the unprecedented disaster struck. We offer an update on a variety of activities undertaken by the KHI Group during this time.

## Review of Business Continuity Plan for Large-scale Earthquakes

A business continuity plan (BCP) is itself a management strategy. It requires more than just typical preparations, such as setting up disaster-prevention equipment and running evacuation drills, to expedite emergency responses in the wake of a disaster. It must also detail approaches to ensure that business continues without interruption and that the corporate mission is fulfilled. The lessons learned in the Great Hanshin

Earthquake, which hit the Kobe area in January 1995, formed the basis of the Group's disaster-prevention measures, and the outbreak of a new influenza virus in 2009 prompted the establishment of a BCP. However, with the Great East Japan Earthquake of March 2011, the BCP was revised to enhance the Group's ability to deal with the consequences of a large-scale earthquake.

### 1 Basic Corporate Policy Determine course of action to be taken by the KHI Group in the event of a large-scale earthquake

Basic corporate policy has been set for the KHI Group that clarifies courses of action to be taken in an emergency. Naturally, human life is the highest priority, and once again we documented our commitment to fulfilling the social responsibilities incumbent upon an enterprise that plays such an essential role in the creation of social infrastructure. When a large-scale earthquake strikes, our focus must be on operational support for equipment, including aircraft and naval vessels, used in rescue activities, and efforts to restore and repair infrastructure systems or components thereof, such as rolling stock, power generation facilities and waste-processing facilities, as quickly as possible and to assist our clients and business partners in returning operations back to normal.

#### Basic Corporate Policy

- Ensure safety and health of employees and their families.
- Ensure services and products that are essential to the fulfillment of corporate responsibility go on without interruption.
- Get Group operations back to normal.
- Acknowledge responsibility to local communities and contribute to each region.

### 2 Head Office and Internal Company Priorities With the basic corporate policy in mind, designate functions to be maintained at the head office and internal companies in the event of disaster.

We have identified priorities for the head office and internal companies in line with our basic corporate policy and have designated certain functions that must be maintained even in the event of disaster with due consideration given to the different business content of each internal company and the features inherent in products and services.

### 3 Response in Time of Disaster and Preparation during Normal Time Consider responses appropriate in the wake of disaster and prepare for the eventuality of such events during normal times.

Many disaster scenarios indicate the possibility of a massive earthquake centered directly under Tokyo as well as a cascade-like triple megaquake event along the Tokai-Tonankai-Nankai segment of the Pacific Ocean coastline. Bearing these potential events in mind, we considered the responses necessary should such catastrophes occur and activities that could be undertaken during normal times to prepare for such eventualities.

We formulated a plan that designated specific divisions with a specific task, and outlined preparations necessary to achieve the desired objectives. Preparations are moving ahead in line with this plan.

### 4 Drills and Revisions Drills are undertaken regularly and content is revised based on results.

We are constantly running BCP drills and revising BCP content based on how the drills were performed.

\*More information on our BCP is available in the Full Report.



A simulation disaster drill for essential personnel in the local command center at the Tokyo head office in August 2011.

## Frontline Perspective from the Disaster Area Message from the Senior Manager of the Sendai Office

A year after the disaster, we continue to help the region recover and rebuild.

Right after the disasters, myself and others—not only those at the Sendai Office but everyone associated with the office—responded as best we could in our respective capacities to fulfill our social responsibility. From the evening of the day disaster struck, the office began receiving requests for restoration of damaged infrastructure facilities, and the next morning, a few people who were able to get to the office joined me in getting discussions started with representatives from disaster-stricken municipalities and ensuring a timely restoration response. Also, as part of our community response, we met with many local governments to get information about what equipment and materials was needed for relief efforts and restoration operations, and we were able to provide wheel loaders and a crushing machine for moving and processing rubble and debris, motorcycles for efficiently traversing a broken landscape and transporting

goods, and a helicopter that became the community's eye in the sky—all at no cost.

Even now, a year after the earthquake and tsunami, many issues still require attention before reconstruction can get fully under way. I believe that efforts to successfully address these challenges include the active involvement of the private sector.

KHI has strengths in diverse reconstruction-supporting fields, including energy, the environment and transportation equipment, that can help in the rebuilding process. By utilizing this base of expertise and providing the necessary infrastructure support, particularly distributed power sources and renewable energy systems as well as products to reinforce crisis management efforts, we will accelerate reconstruction and development in the Tohoku region and contribute to the creation of communities that are more resilient to disaster.



Hayato Nakamura, Senior Manager, Sendai Office

\*For information about our support for reconstruction and restoration in the disaster area, see the Full Report.

## Efforts to Address Stable Energy Supply

An issue that the Great East Japan Earthquake pushed into the spotlight is stable energy supply, and the KHI Group addresses this issue in various ways.

### Effective Operation of Standby Gas Turbine Power Generation Systems in Times of Disaster

In a survey of system operating status during the power outages and rolling blackouts associated with the events of March 11, 2011, and the aftershocks that followed, 1,034 standby gas turbine generation systems out of 1,035 continued to supply power without any problem, for an operating rate of 99%. The one system that was not in operation had not undergone regular maintenance. Targeting an operating rate of 100%, we will establish a power feed structure that is truly reliable even in emergency situations.



Highly reliable standby gas turbine power generation system

### Increased Production of Gas Engine Power Generation Systems

Given the inability of commercial power facilities to meet demand after the earthquake and tsunami, the need for stable power supply grew stronger day by day. Distributed power sources, especially in-house power generation systems, are widely seen as a possible answer to the problem, and KHI, seeking to contribute to stable power supply without harm to the environment, expanded monthly production capacity of its Green Gas Engine to four units. This system boasts the world's highest power generating efficiency and environmental features.



The Green Gas Engine boasts the world's highest power generating efficiency—49.5%.

### Power Supply to Power Company

In response to a request to address reduced power capacity paralleling the shutdown of nuclear power plant operations, KHI increased its generating capacity for the Kawasaki-brand gas turbine in-house power generation system at Akashi Works, boosted the amount generated, and supplied the output to a power company to ensure stable power supply to its service area. Between February 1, 2012 and March 31, 2012, total power volume hovered at 16 million kWh. This is equivalent to the amount used by approximately 27,000 ordinary households. Going forward, we will continue to support the power company to the extent that we are able and meet the electricity needs of society.



Gas turbine generation system at Akashi Works