



Learning from Disaster: Responses to the Niigata-Chuetsu Earthquake

It was 5:56 p.m. on October 23, 2004. The Chuetsu region of Niigata Prefecture was rocked by a JMA scale intensity seven earthquake. What happened there on the ground? And what lessons were learned? Here we look at coordinated efforts by the entire JR East Group to ensure safety and provide rapid responses.

Routine training pays off

As soon as JR East received word of the earthquake, the Risk Management Headquarters was in action. At 6 p.m., four minutes after the quake, the response headquarters were set up, and by the next morning, company officials were already in the quake area, with the response order in place.

At about the same time, Masaaki Kobayashi, Assistant Depot Chief for the Niigata Shinkansen Transportation Depot was at work at the Niigata Station when the quake occurred. He collected information and made preparations on the assumption that the train schedule would be disrupted by the earthquake. By a dedicated phone line he received information from crews about the situation in trains. On that day, employees on their days off work came in to help organize the incoming information and verify the situation.

Then the most shocking news came in: a Shinkansen train might have been derailed. "I heaved a sigh of relief when I heard that no one was hurt!" says Mr. Kobayashi. No one had been hurt, but the crew still had to guide passengers to evacuate from the Shinkansen.

It was pitch black outside due to a power failure, and due to bad conditions, no vehicles could reach them by road, so some people had to walk several kilometers, and others from another train had to climb a 500-step flight of stairs to get out of a tunnel. It was difficult, but with the help of other passengers, they were able to complete the rescue operation without a single injury.



Masaaki Kobayashi

Assistant Depot Chief
Niigata Shinkansen Transportation Depot
JR East

"Some passengers even gave a hand to help during the evacuation. I've heard from crew members that they were quite moved when it was all over and passengers called out to thank them."

Toki 325 derailed on the Joetsu Shinkansen Line between Urusa and Nagaoka. Aftershocks continued during removal, inspection, and recovery work.

"Crews put passenger safety above all, and responded as the situation demanded. I think that it's in extreme situations that the results of routine training come out." Besides routine training of two hours per month for all employees, and night-time emergency training once each year, special training sessions are also conducted to prepare to respond to events such as the subway fire that happened recently in South Korea. In all of this, the training is made as realistic as possible, pushing the crew to the best of their ability. It is because of routinely conducted training sessions where they can build up their own experience that they were able to respond efficiently to the earthquake.

"With this earthquake, I was convinced that all of our training to date was worth the effort. I think it's important to record events and continue routine training, so the lessons we learned this time don't fade with time."



The Shinano River Hydraulic Power Plant, operated by JR East, was damaged by the earthquake. Amid a heavy snowfall, repair work continued day and night to get the water flowing again as soon as possible.

A Major Lesson: Never Stop Improving Safety

"I've been doing maintenance work on Shinkansen tunnels for ten years now. It almost brought me to tears of shock to see the collapsed inner wall of a tunnel after the earthquake because I had been confident of its maintenance condition," says Hideo Kobayashi, Deputy Manager of the Nagaoka Depot of the Niigata Civil Engineering Center.

The general thinking used to be that tunnels were resistant to earthquakes, because if the mountain moved, the tunnel would move with it. The collapse of this wall was a big shock not only to JR East but to everyone.

It was early in November that the main repair work began: "We worked with the goal of re-opening the line by



Scene of the Joetsu Shinkansen Uonuma Tunnel, about 2.4 km from the tunnel entrance. The earthquake damage was far greater than generally expected.

the end of the year or early the next year." Driven by the sense of mission to open the route for the many people waiting, JR East Group worked in coordinated fashion day and night. Thanks to the cooperation and supports of many, including members of construction companies, they succeeded in opening the Joetsu Shinkansen route on December 28.

The fact that there were no injuries among passengers and train crews, despite the size of this earthquake, tells us that the seismic upgrades have been effective. In this particular case, although the section of track where the Shinkansen was derailed was outside of what had been identified as the priority regions of the Tokyo metropolitan area and Sendai area, JR East had decided to make seismic upgrades here too, in light of the size of the active fault here. Meanwhile, Japan's Ministry of Land, Infrastructure and Transport is also investigating to determine the cause of the derailment and what countermeasures are needed for the future, but as a matter of social responsibility as the first company ever to experience a train derailment on a Shinkansen due to an earthquake, JR East is also conducting its own thorough investigation.

"With this earthquake, we were strongly reminded that there is no such thing as perfect safety. I deeply felt that the status quo is never enough. It is important to always aim for one level higher when it comes to safety. We are in a position to convey this technology to younger employees, and this is one of the lessons I need to pass on to them."



Hideo Kobayashi

Deputy Manager, Nagaoka Depot
Niigata Civil Engineering Center
JR East

"We had conducted seismic upgrades on the Joetsu Shinkansen, aware that the elevated railway tracks had collapsed during the Kobe earthquake in 1995. We were very relieved that no serious damage arose on the elevated tracks after the Chuetsu quake."

Supporting the local post-quake economic recovery

"Although the actual area that was seriously damaged by the earthquake was fairly limited, Niigata Prefecture as a whole suffered as a result of the image of destruction," says Hiroyuki Nakamura, Section Chief of the Sales Section, Marketing Division, JR Niigata Branch Office. Even places quite far away from the earthquake-affected area, such as Senami Hotsprings and Sado Island, were inundated with travel cancellations just because they were in the same prefecture of Niigata.

Immediately after the earthquake, he felt strongly that he had to take steps to revive tourism. Preparations were made for the reopening of the Shinkansen line, and JR East was able to launch a marketing campaign starting on December 28th, the first day of renewed operations, and running until the end of March, under the slogan "Gambatte-masu!! Niigata" (roughly translated as "Niigata. We're Going For It!").

JR East offered special discount tickets and travel products. It also launched a prize reward campaign in the Tokyo area. We arranged special Shinkansen trains from the Tokyo area to a festival in the city of Nagaoka, which had been hard-hit by the earthquake, and to events organized by Kuramoto (Sake brewers) in Niigata Prefecture, and both of them were almost fully booked. Attracting a total of 190,000 people, the Niigata support campaigns surpassed our original target of 180,000 and ended as a success. "JR East covers all regions of eastern Japan, so we are in a position to both send and receive customers. In that sense, I felt that our role in restoring tourism was significant."

Mr. Nakamura continues, "The earthquake gave us the impetus to develop stronger links in the local community. I'd like to nurture these, and continue with our efforts in the broadest sense to promote tourism and the local economy." The earthquake was a great misfortune, but they will not allow the lessons of this experience to be forgotten. They will be put to good use in the future. This sense of conviction is the same in all employees, regardless of their department or position in the company.



Hiroyuki Nakamura

Section Chief, Sales Section, Marketing Division
Niigata Branch Office, JR East

"People of Niigata have a tradition of saying 'I'm all right' and refraining from asking for help in a disaster. But this time, I've heard people say that thanks to this campaign, people worked together to overcome the difficulties."

In September 2004, the annual comprehensive disaster prevention drill was conducted based on an intensity-six earthquake scenario. About 15,000 employees participated. Only routine preparations ensure a calm response to emergencies.



Many sections of conventional line tracks were also damaged. Efforts to inspect the damage were conducted while taking care to avoid secondary disasters.



Special discount travel pamphlets were distributed at major stations through the cooperative efforts of travel companies and local businesses.