



## Japan Held Nuclear Data, Leaving Evacuees in Peril

[The New York Times](#) by [NORIMITSU ONISHI](#) and [MARTIN FACKLER](#)

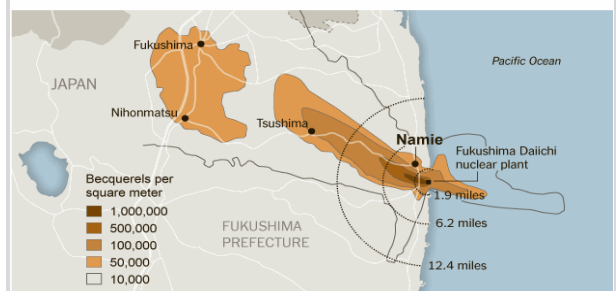
FUKUSHIMA, Japan — The day after a giant tsunami set off the continuing disaster at the Fukushima Daiichi nuclear plant, thousands of residents at the nearby town of Namie gathered to evacuate.

Given no guidance from Tokyo, town officials led the residents north, believing that winter winds would be blowing south and carrying away any radioactive emissions. For three nights, while hydrogen explosions at four of the reactors spewed radiation into the air, they stayed in a district called Tsushima where the children played outside and some parents used water from a mountain stream to prepare rice.

The winds, in fact, had been blowing directly toward Tsushima — and town officials would learn two months later that a government computer system designed to predict the spread of radioactive releases had been showing just that.

### An Early Forecast of Radiation

A Japanese computerized early warning system started to generate maps projecting the trajectory of radiation plumes from the Fukushima Daiichi plant within hours of the accident on March 11, but none of the maps were made available to the public until nearly two weeks later. The map below shows information made available to the prime minister's office on March 16.



Source: Nuclear Emergency Response Headquarters Office of Japan

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But the forecasts were left unpublicized by bureaucrats in Tokyo, operating in a culture that sought to avoid responsibility and, above all, criticism. Japan's political leaders at first did not know about the system and later played down the data, apparently fearful of having to significantly enlarge the evacuation zone — and acknowledge the accident's severity.

"From the 12th to the 15th we were in a location with one of the highest levels of radiation," said Tamotsu Baba, the mayor of Namie, which is about five miles from the nuclear plant. He and thousands from Namie now live in temporary housing in another town, Nihonmatsu. "We are extremely worried about internal exposure to radiation"

**The withholding of information, he said, was akin to "murder."**

In interviews and public statements, some current and former government officials have admitted that Japanese authorities engaged in a pattern of withholding damaging information and denying facts of the nuclear disaster — in order, some of them said, to limit the size of costly and disruptive evacuations in land-scarce Japan and to avoid public questioning of the politically powerful nuclear industry. As the nuclear plant continues to release radiation, some of which has slipped into the nation's food supply, public anger is growing at what many here see as an official campaign to play down the scope of the accident and the potential health risks.

Seiki Soramoto, a lawmaker and former nuclear engineer to whom Prime Minister Naoto Kan turned for advice during the crisis, blamed the government for withholding forecasts from the computer system, known as the System for Prediction of Environmental Emergency Dose Information, or Speedi.

"In the end, it was the prime minister's office that hid the Speedi data," he said. "Because they didn't have the knowledge to know what the data meant, and thus they did not know what to say to the public, they thought only of their own safety, and decided it was easier just not to announce it."

In an interview, Goshi Hosono, the minister in charge of the nuclear crisis, dismissed accusations that political considerations had delayed the release of the early Speedi data. He said that they were not disclosed because they were incomplete and inaccurate, and that he was presented with the data for the first time only on March 23. "And on that day, we made them public," said Mr. Hosono, who was one of the prime minister's closest advisers in the early days of the crisis before being named nuclear disaster minister. "As for before that, I myself am not sure. In the days before that, which were a matter of life and death for Japan as a nation, I wasn't taking part in what was happening with Speedi."

The computer forecasts were among many pieces of information that the authorities initially withheld from the public.

Meltdowns at three of Fukushima Daiichi's six reactors went officially unacknowledged for months. In one of the most damning admissions, nuclear regulators said in early June that inspectors had found tellurium 132, which experts call telltale evidence of reactor meltdowns, a day after the tsunami — but did not tell the public for nearly three months.

For months after the disaster, the government flip-flopped on the level of radiation permissible on school grounds, causing continuing confusion and anguish about the safety of schoolchildren here in Fukushima.



PREVENTIVE MEASURES Officials in Koriyama, Japan, removed surface soil from its schools for fear of radiation contamination and imposed tougher inspection standards than those set by the country's education officials.

The timing of many admissions — coming around late May and early June, when inspectors from the International Atomic Energy Agency visited Japan and before Japan was scheduled to deliver a report on the accident at an I.A.E.A. conference — suggested to critics that Japan's nuclear establishment was coming clean only because it could no longer hide the scope of the accident. On July 4, the Atomic Energy Society of Japan, a group of nuclear scholars and industry executives, said, "It is extremely regrettable that this sort of important information was not released to the public until three months after the fact, and only then in materials for a conference overseas."

The group added that the authorities had yet to disclose information like the water level and temperature inside reactor pressure vessels that would yield a fuller picture of the damage. Other experts have said the government and Tokyo Electric Power Company, known as Tepco, have yet to reveal plant data that could shed light on whether the reactors' cooling systems were actually knocked out solely by the 45-foot-tall tsunami, as officials have maintained, or whether damage from the earthquake also played a role, a finding that could raise doubts about the safety of other nuclear plants in a nation as seismically active as Japan.

Government officials insist that they did not knowingly imperil the public.

"As a principle, the government has never acted in such a way as to sacrifice the public's health or safety," said Mr. Hosono, the nuclear disaster minister.

Here in the prefecture's capital and elsewhere, workers are removing the surface soil from schoolyards contaminated with radioactive particles from the nuclear plant. Tens of thousands of children are being kept inside school buildings this hot summer, where some wear masks even though the windows are kept shut. Many will soon be wearing individual dosimeters to track their exposure to radiation.



PARENTAL INITIATIVE A great deal of anger in Japan has centered on fears that children were being exposed to radiation.

At Elementary School No. 4 here, sixth graders were recently playing shogi and go, traditional board games, inside. Nao Miyabashi, 11, whose family fled here from Namie, said she was afraid of radiation. She tried not to get caught in the rain. She gargled and washed her hands as soon as she got home.

"I want to play outside," she said.

About 45 percent of 1,080 children in three Fukushima communities surveyed in late March tested positive for thyroid exposure to radiation, according to a recent announcement by the government, which added that the levels were too low to warrant further examination. Many experts both in and outside Japan are questioning the government's assessment, pointing out that in Chernobyl, most of those who went on to suffer from thyroid cancer were children living near that plant at the time of the accident.

Critics inside and outside the Kan administration argue that some of the exposure could have been prevented if officials had released the data sooner.

On the evening of March 15, Mr. Kan called Mr. Soramoto, who used to design nuclear plants for Toshiba, to ask for his help in managing the escalating crisis. Mr. Soramoto formed an impromptu advisory group, which included his former professor at the University of Tokyo, Toshiso Kosako, a top Japanese expert on radiation measurement. Mr. Kosako, who studied the Soviet response to the Chernobyl crisis, said he was stunned at how little the leaders in the prime minister's office knew about the resources available to them. He quickly advised the chief cabinet

secretary, Yukio Edano, to use Speedi, which used measurements of radioactive releases, as well as weather and topographical data, to predict where radioactive materials could travel after being released into the atmosphere. Speedi had been designed in the 1980s to make forecasts of radiation dispersal that, according to the prime minister's office's own nuclear disaster manuals, were supposed to be made available at least to local officials and rescue workers in order to guide evacuees away from radioactive plumes.

And indeed, Speedi had been churning out maps and other data hourly since the first hours after the catastrophic earthquake and tsunami. But the Education Ministry had not provided the data to the prime minister's office because, it said, the information was incomplete. The tsunami had knocked out sensors at the plant: without measurements of how much radiation was actually being released by the plant, they said, it was impossible to measure how far the radioactive plume was stretching.

**"Without knowing the strength of the releases, there was no way we could take responsibility if evacuations were ordered,"** said Keiji Miyamoto of the Education Ministry's nuclear safety division, which administers Speedi.

The government had initially resorted to drawing rings around the plant, evacuating everyone within a radius of first 1.9 miles, then 6.2 miles and then 12.4 miles, widening the rings as the scale of the disaster became clearer. But even with incomplete data, Mr. Kosako said he urged the government to use Speedi by making educated guesses as to the levels of radiation release, which would have still yielded usable maps to guide evacuation plans. In fact, the ministry had done precisely that, running simulations on Speedi's computers of radiation releases. Some of the maps clearly showed a plume of nuclear contamination extending to the northwest of the plant, beyond the areas that were initially evacuated.

**However, Mr. Kosako said, the prime minister's office refused to release the results even after it was made aware of Speedi, because officials there did not want to take responsibility for costly evacuations if their estimates were later called into question.**

A wider evacuation zone would have meant uprooting hundreds of thousands of people and finding places for them to live in an already crowded country. Particularly in the early days after the earthquake, roads were blocked and trains were not running. These considerations made the government desperate to limit evacuations beyond the 80,000 people already moved from areas around the plant, as well as to avoid compensation payments to still more evacuees, according to current and former officials interviewed.

Mr. Kosako said the top advisers to the prime minister repeatedly ignored his frantic requests to make the Speedi maps public, and he resigned in April over fears that children were being exposed to dangerous radiation levels. Some advisers to the prime minister argue that the system was not that useful in predicting the radiation plume's direction. Shunsuke Kondo, who heads the Atomic Energy Commission, an advisory body in the Cabinet Office, said that the maps Speedi produced in the first days were inconsistent, and changed several times a day depending on wind direction.

"Why release something if it was not useful?" said Mr. Kondo, also a retired professor of nuclear engineering at the University of Tokyo. "Someone on the ground in Fukushima, looking at which way the wind was blowing, would have known just as much."

Mr. Kosako and others, however, say the Speedi maps would have been extremely useful in the hands of someone who knew how to sort through the system's reams of data. He said the Speedi readings were so complex, and **some of the predictions of the spread of radiation contamination so alarming**, that three separate government agencies — the Education Ministry and the two nuclear regulators, the Nuclear and Industrial Safety Agency and Nuclear Safety Commission — passed the data to one another like a hot potato, with none of them wanting to accept responsibility for its results.

In interviews, officials at the ministry and the agency each pointed fingers, saying that the other agency was responsible for Speedi. The head of the commission declined to be interviewed.

Mr. Baba, the mayor of Namie, said that if the Speedi data had been made available sooner, townspeople would have naturally chosen to flee to safer areas. "But we didn't have the information," he said. "That's frustrating." Evacuees now staying in temporary prefabricated homes in Nihonmatsu said that, believing they were safe in Tsushima, they took few precautions. Yoko Nozawa, 70, said that because of the lack of toilets, they resorted to pits in the ground, where doses of radiation were most likely higher.

"We were in the worst place, but didn't know it," Ms. Nozawa said. "Children were playing outside."

A neighbor, Hiroyuki Oto, 31, said he was working at the plant for a Tepco subcontractor at the time of the earthquake and was now in temporary lodging with his wife and three young children, after also staying in Tsushima. "The effects might emerge only years from now," he said of the exposure to radiation. "I'm worried about my kids."

**Mr. Hosono, the minister charged with dealing with the nuclear crisis, has said that certain information, including the Speedi data, had been withheld for fear of "creating a panic."**



" In an interview, Mr. Hosono — who now holds nearly daily news conferences with Tepco officials and nuclear regulators — said that the government had "changed its thinking" and was trying to release information as fast as possible.

Critics, as well as the increasingly skeptical public, seem unconvinced. They compare the response to the Minamata case in the 1950s, a national scandal in which bureaucrats and industry officials colluded to protect economic growth by hiding the fact that a chemical factory was releasing mercury into Minamata Bay in western Japan. The mercury led to neurological illnesses in thousands of people living in the region and was captured in wrenching photographs of stricken victims.

"If they wanted to protect people, they had to release information immediately," said Reiko Seki, a sociologist at Rikkyo University in Tokyo and an expert on the cover-up of the Minamata case. "Despite the experience with Minamata, they didn't release Speedi."

In Koriyama, a city about 40 miles west of the nuclear plant, a group of parents said they had stopped believing in government reassurances and recently did something unthinkable in a conservative, rural area: they sued. Though their suit seeks to force Koriyama to relocate their children to a safer area, their real aim is to challenge the nation's handling of evacuations and the public health crisis.

After the nuclear disaster, the government raised the legal exposure limit to radiation from one to 20 millisieverts a year for people, including children — effectively allowing them to continue living in communities from which they would have been barred under the old standard. The limit was later scaled back to one millisievert per year, but applied only to children while they were inside school buildings.

The plaintiffs' lawyer, Toshio Yanagihara, said the authorities were withholding information to deflect attention from the nuclear accident's health consequences, which will become clear only years later.

"Because the effects don't emerge immediately, they can claim later on that [cigarettes](#) or coffee caused the [cancer](#)," he said.

The Japanese government is considering monitoring the long-term health of Fukushima residents and taking appropriate measures in the future, said Yasuhiro Sonoda, a lawmaker and parliamentary secretary of the Cabinet Office. The mayor of Koriyama, Masao Hara, said he did not believe that the government's radiation standards were unsafe. He said it was "unrealistic" to evacuate the city's 33,000 elementary and junior high school students.

But Koriyama went further than the government's mandates, removing the surface soil from its schools before national directives and imposing tougher inspection standards than those set by the country's education officials.



Primary school playgrounds in Fukushima

[ZOOM](#)



Contaminated soil at a school in Koriyama, Japan

"The Japanese people, after all, have a high level of knowledge," the mayor said, "so I think information should be disclosed correctly and quickly so that the people can make judgments, especially the people here in Fukushima."

*Norimitsu Onishi reported from Fukushima, and Martin Fackler from Tokyo. Ken Belson and Kantaro Suzuki contributed reporting from Tokyo.*