

# NUKE INFO TOKYO

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CN<sub>I</sub>C Citizens' Nuclear Information Center



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## CNIC Welcomes the Request to Stop All Reactors at Hamaoka NPP Finally, some common sense...

**A**t a press conference on the evening of May 6, Prime Minister Naoto Kan announced an appeal to stop the operation of Chubu Electric's Hamaoka-4 and 5. Chubu Electric held meetings of its board of directors, subsequently decided to accept the request, and from May 13 the reactors were shut down in order. This was the obvious conclusion considering the impending Tokai Earthquake, and we welcome this announcement and the subsequent shutdown.

At the end of 2008, Chubu Electric decided to decommission Hamaoka-1 and 2. The reason was that it was simply too costly to reinforce the reactors against the revised earthquake standards. However, Chubu decided to continue the operation of Hamaoka-3, 4, and 5.

The long-feared nuclear disaster finally occurred at the Fukushima Daiichi Nuclear Power Station (also referred to as Fukushima I). Although of different sizes and locations within the reactors, hydrogen explosions occurred in Units 1 through 4, scattering huge amounts of radioactivity and contaminating an extensive area. A meltdown occurred in Units 1, 2, and 3, finally admitted by Tokyo Electric on May 25, and still at any moment, a hydrogen explosion could occur again.

While Fukushima I was stuck in the middle



of this dangerous situation, Chubu Electric's Hamaoka-3 was undergoing scheduled maintenance. On April 28, Chubu Electric announced its "operation target for 2011," which was premised on restarting Hamaoka-3 in July. In response to this, Minister of Economy, Trade, and Industry Kaieda visited Chubu Electric on May 5 and stated that he would not approve a restart of Unit 3 in July.

### Contents

Hamaoka: All reactors stop	1,2
Fukushima Nuclear Disaster	3,4
Fukushima: Radiation Dispersal	5,6
Restarting KK-3 within the Year?	7,8
Conserve the Sea of Miracles	9
Chernobyl 25 Years Later	10
Group Intro: Hairo Action Fukushima	11
Examining the Electricity Supply Plans	12

On March 30, the Ministry of Economy, Trade, and Industry issued emergency safety measures to each electric power company based on the experience of the Fukushima nuclear disaster. The published details included the following: "Emergency measures are to be taken to prevent the occurrence of damage to the reactor core and spent fuel even when 1) all AC power sources, 2) seawater cooling function and 3) spent fuel pool cooling function are lost due to a tsunami. Even in the event that all three functions are lost, damage to the reactor core and spent fuel must be prevented, and cooling functions must be recovered while containing the release of radioactive material."

In response, on April 20, Chubu Electric announced implementation of the following emergency safety measures: 1) installation of nine emergency power generators, 2) deployment of eight portable power pumps and fire hoses, and 3) deployment of six compressed nitrogen gas cylinders. Countermeasures still to be implemented included 1) the construction of a breakwater wall (a 12 m levee, based on the average sea level of Tokyo Bay), 2) reinforcement of watertight door structures, and 3) the procurement of backup spare parts for the emergency core cooling systems (ECCS).

Ground surveys for the breakwater wall are already underway, and construction will take about three years. Reinforcement of the watertight door structures will also require nearly three years to complete. Regarding these countermeasures, Chubu Electric had planned on carrying out these measures while continuing to operate the reactors.

Based on the experience of the earthquake off the Pacific coast of northeastern Japan on March 11, 2011, will the anticipated height of the wall be adequate if the Tokai Earthquake occurs? Doubts will remain concerning the strength of the wall against a surging tsunami, given the lack of definite information. The feeling that these are makeshift countermeasures is hard to deny. Be that as it may, what will happen if the Tokai Earthquake occurs while the wall is still under construction?

In 2003, concerned local citizens filed a lawsuit in a district court to halt operations of the Hamaoka NPP because of the likelihood of the Tokai Earthquake occurring in the near future. The result of the first verdict in 2007 was that the citizens lost the case, and it is now being contended in the Tokyo High Court.

In 2009, Hamaoka-5 shook abnormally from the Suruga Bay Earthquake. Chubu Electric claimed that, "There is a need to gain a detailed understanding of the mechanism of the amplification of the (main) Suruga Bay Earthquake in Unit 5 since it has not been possible to explain quantitatively the amplification seen in Unit 5 of only the main S-wave ground motion and the high frequency seismic waves in the region of 0.2 to 0.5 seconds."\*

In other words, since the mechanism of the shaking in Hamaoka-5 from the 2009 earthquake has yet to be explained, can we have confidence that the reactor will properly withstand the Tokai Earthquake? Doubts are inexhaustible. Furthermore, it has been pointed out that the Tokai Earthquake might occur in conjunction with Tonankai and Nankai Earthquakes. This greatly raises the possibility of increased fault slippage, as indicated in the March 11 earthquake. If this is the case, current expectations of ground movement are inadequate.

It was also natural, to cope with any tsunami that might occur, to halt operations while the breakwater wall is under construction. Again, sufficient deliberations are needed to assess whether or not Hamaoka-3, 4 and 5 can withstand the movements of a Tokai/Tonankai earthquake. It is hard to believe that the Hamaoka Nuclear Plant will be able to resume operations.

Hideyuki Ban (CNIC Co-Director)

\*Verification of the impact on the earthquake-resistance safety for verification of the impact on Hamaoka NPP Unit 5 from the Suruga Bay Earthquake (Summary of the content of reports thus far in the joint WG), December 3, 2010.

# The Fukushima Nuclear Disaster: Evolution of the Crisis and Resulting Radiation Levels

The earthquake struck at 14:46 on March 11, 2011. The seismograph on the floor of the basement of Fukushima Daiichi Nuclear Power Station's containment building registered ground accelerations of up to 550 gals. Immediately afterward, online reactor Units 1, 2, and 3 went into emergency shutdown. Because the mammoth tremor toppled nearby transmission towers, the plant's external electricity supply was cut off, prompting emergency diesel generators to start up automatically.

The second wave of the quake-generated tsunami hit Fukushima I at 15:35. Tokyo Electric Power Company (TEPCO), which operates the plant, told a press conference that the wave - more than 7.5 meters high - was so large that it destroyed the installation's tidal monitoring equipment. At about 15:41, the diesel generators malfunctioned and shut down, depriving Fukushima I of all AC electrical power. Consequently, cooling pumps, vents, and other devices dependent on electricity stopped working.

By this time, irregularities, including a drop in reactor core water levels, were being observed. The high-pressure core flooder system, part of the emergency core cooling system, attempted to activate itself, but only the system in Unit 3 started successfully; the flooder equipment in Units 1 and 2 failed to operate (the high-pressure core flooder system is designed to operate on core-generated steam in the event of a shutdown).

In Unit 1, the emergency condenser was used to cool the core, and in Units 2 and 3, this task was performed by the reactor core isolation cooling system, but difficulties persisted in verifying that water was effectively reaching the core. The water-level gage in Unit 2 was broken, and for a period of time, the core water level could not be determined in that reactor.

While plant operators were preoccupied with Unit 2, conditions in Unit 1 deteriorated. At 23:00 on March 11, radiation levels in the Unit 1 turbine building soared, and at 00:30 on March 12, it was found that pressure inside the containment vessel housing the core had exceeded the maximum pressure the installation was designed to withstand.

## Hydrogen Explosions Follow Containment Vents

TEPCO began contemplating the emergency

venting of radioactive steam in the containment vessel in order to reduce the pressure inside. The objective was to prevent an excessive head of steam from rupturing the steel and concrete containment structure, but that would mean, in effect, destroying its primary purpose, which is to keep radioactivity inside the vessel, preventing its release into the atmosphere.

Between 05:00 and 09:00 on March 12, the water level in the Unit 1 core dropped precipitously, gradually exposing the fuel rods to air. It is thought that from this point onward, radioactivity was being vented continuously. According to measurements by TEPCO's monitoring car,  $0.866 \mu\text{Sv/h}$  were detected at the plant's main entrance at 04:40, and by 05:10, levels had reached  $1.59 \mu\text{Sv/h}$ , values 10 and 20 times higher, respectively, than normal.

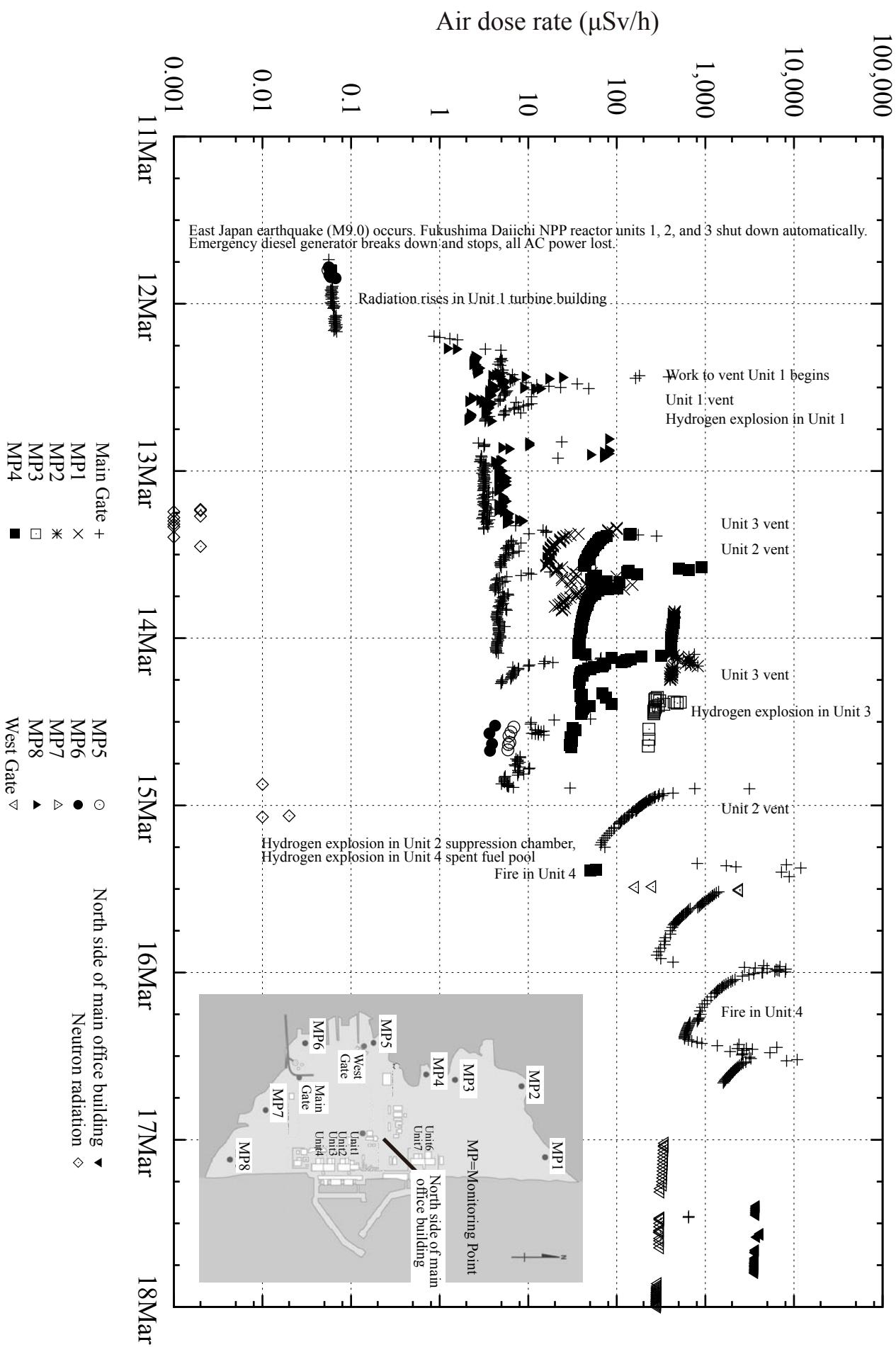
At 14:30 on March 12, the vent on the Unit 1 containment vessel was activated, releasing a plume of radioactive steam into the atmosphere, and within a short period of time, there were reports that radioactive cesium had been detected in the air. One hour later, a hydrogen explosion occurred in the containment building of Unit 1.

At 02:45 on March 13, the high-pressure flooder system in Unit 3 came to a halt, gradually exposing the fuel rods, and the containment vessel vent was opened twice. At 11:01 on March 14, a hydrogen explosion took place in this unit as well.

At Unit 2, in the afternoon of March 14, water injection via the reactor core isolation cooling system came to a stop, and workers began pouring seawater into the core, but the water level could not be restored. On March 15 at 00:02, the vent was opened, and at 06:10, a second hydrogen explosion erupted inside the pressure suppression chamber. Four minutes later, a hydrogen explosion followed by a fire occurred at Unit 4. The cause was most likely uncovered spent fuel rods in the unit's cooling pool interacting with the air after water in the pool had evaporated.

The following figure summarizes the Fukushima nuclear disaster and the contamination of the plant and surrounding areas by growing levels of radioactivity.

Chihiro Kamisawa (CNIC)



## Radiation Dispersed over a Wide Area

**R**adiation released by the Fukushima Daiichi Nuclear Power Station has scattered over a wide area. It is thought that this dispersion of radioactive material has been caused mainly by hydrogen explosions in three of the reactors. The reactor vessels and containment vessels have been damaged and radioactive pollution, not only of the atmosphere but also of the sea, has begun. It is clear from measurements of published air dose rates at different locations that the dispersal depends largely on wind direction and topology.

Estimating the amount of radioactivity emitted from the radioactivity monitoring data, the Nuclear Safety Commission (NSC) raised the accident level to 7 on April 12. According to the NSC announcement, the amount of radioactivity calculated as the equivalent of emitted iodine was estimated at 370,000 to 640,000 terabecquerels ( $1 \text{ tera} = 10^{12}$ ). However, this refers only to atmospheric dispersal and does not take into consideration the problem of the amount of radioactivity in the polluted water that has accumulated in the turbine building and elsewhere.

Each prefecture has also published air dose rates (see Figure 1). Looking at the figures for Fukushima Prefecture, the peak was  $44.7 \mu\text{Sv/hr}$  (microSieverts/hour) in the area of Iitate Village outside the 20 km evacuation zone. Even at Fukushima City, 60 km from the accident site, the dose rate exceeded  $20 \mu\text{Sv/hr}$ . In Tokyo,  $0.2 \mu\text{Sv/hr}$  were detected; too small a value to show in the figure, but several times larger than normal. Since the value would normally be less than  $0.1 \mu\text{Sv/hr}$ , this shows that extremely high values were observed in areas downwind from the accident site.

From the point of view of personal exposure, external exposure can be estimated from exposure duration. Since these are outdoor air dose rates, in times of high doses the indoor dose rate would fall to less than half of the value. It is also necessary, however, to take into account exposure from inhalation of radioactive material.

Radioactivity released into the environment not only affects the atmosphere (see bottom of the left-hand column on p.7), but also results in pollution of the soil and various kinds of food and drink. The Ministry of Health, Labour and Welfare (MHLW) has released the results of a strengthened observation system. One example of this is shown

in Table 1, below. Provisional regulation criteria have been set for radioactive iodine and cesium, samples taken and studied, and distribution of produce found to exceed the criteria has been prohibited.

The criteria are monitored for the radioisotopes iodine-131, cesium-137, and sometimes cesium-134. These isotopes disintegrate through beta decay and simultaneously or subsequently emit gamma radiation of a particular energy, making them easy to detect and measure. That is why they have become radiation indices. The safety levels and the published measurement results do not mean that there is no pollution by other types of radioactive material, but that radioactivity from elements other than iodine and cesium is not measured. However, looking at the development of the accident, it is unlikely that radioactive strontium has been widely dispersed.

As well as iodine-131, iodine-132 has also been released, their half-lives being eight days and 2.3 hours, respectively. After three months, the amount of iodine-131 will fall to one-2000th of what it was originally. Thus, the problem of iodine pollution resolves itself relatively quickly and is not thought to have an impact on subsequent plantings.

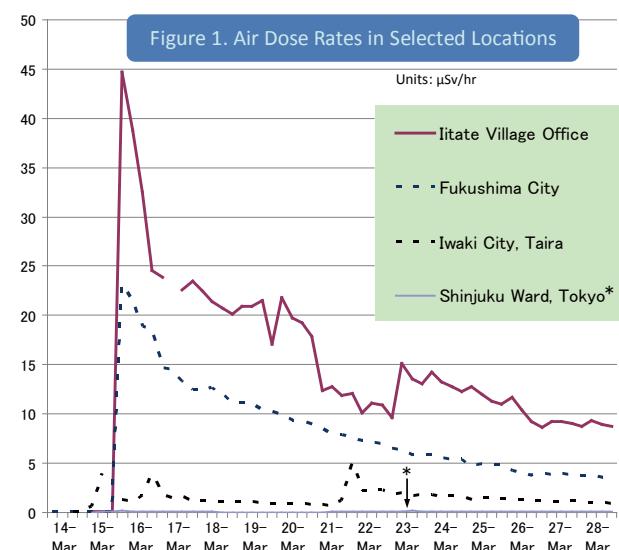
Contrastingly, radioactive cesium is much more troublesome. The cesium isotopes that are the problem are cesium-134, with a half-life of two years, and cesium-137, with a half-life of 30 years. Cesium pollution is thus long-term. From case studies of the Chernobyl nuclear accident, it is known that the greater part of the cesium remains in the surface layer of the soil (roughly the top 20 cm), and is leached out only very slowly by rain. However, how much of the cesium in the soil migrates to crops appears to depend on the soil and the type of crop, and is not well understood.

Assistant professor Tetsuji Imanaka of the Kyoto University Research Reactor Institute very quickly visited Iitate Village at the beginning of the crisis and has reported on the state of radiation pollution of the environment there. (<http://www.rri.kyoto-u.ac.jp/NSRG/seminar/No110/itatemereport11-4-4.pdf> [in Japanese]) The pollution was extremely high and it is thought that the highly polluted areas will not be habitable for some considerable period of time.

For the sake of our health, the government

should lower the provisional regulation criteria and reduce the possibility of internal exposure as far as possible. On the other hand, since this would be a serious blow to producers, they should be provided with adequate compensation. Further, since produce below the criteria is distributed, we have no way of knowing to what degree each food item is polluted with radioactive material. I think the only thing that we can do as individuals is look at the data published by MHLW and by each prefecture and make informed choices about what might or might not be safe.

Hideyuki Ban (CNIC Co-Director)



April 12, 2011

Ibaraki Pref. Dept. of Agriculture, Forestry and Fisheries

**Table 1. Analytical Results for Spinach**

Ibaraki Pref. Environmental Radiation Monitoring Center

District	Item	Concentration of Radioactivity (Bq/kg) Upper: Radioactive iodine; Lower: Radioactive cesium							
		Before directive		Previous 2		Previous 1		Current sample	
		Date	Value	Date	Value	Date	Value	Date	Value
Kitaibaraki City	Spinach	3/18 field	<u>24,000</u>					4/11 field	1,800
			690						621
Takahagi City	Spinach	3/18 field	<u>15,020</u>	3/30 field	<u>6,300</u>	4/6 field	<u>2,700</u>	4/11 field	150
			524		756		444		202
Hitachi City	Spinach	3/18 field	<u>54,100</u>	3/30 field	<u>8,300</u>	4/6 field	400	4/11 field	360
			1,931		799		87		234
Hitachi Ota City	Spinach	3/18 field	<u>8,830</u>	3/30 field	<u>2,700</u>	4/6 field	920	4/11 field	200
			374		176		114		75
Daigo Town	Spinach	3/18 field	<u>6,100</u>			4/6 house	190	4/11 house	180
			478				58		35
Hitachi Omiya City	Spinach	3/18 field	<u>19,200</u>			4/6 field	560	4/11 field	220
			1,040				161		104
Ibaraki Town	Spinach	3/20 house	<u>4,100</u>	3/30 house	<u>2,900</u>	4/6 house	330	4/11 house	85
			96		691		72		12
Hokota City	Spinach	3/19 house	1,900	3/30 house	<u>2,600</u>	4/6 house	1,000	4/11 house	140
			71		111		444		43
Tsukuba City	Spinach	3/20 house	<u>2,300</u>	3/30 house	830	4/6 house	82	4/11 house	40
			105		69		19		*
Moriya City	Spinach	3/18 field	<u>2,100</u>	3/30 field	1,500	4/6 house	110	4/11 house	47
			121		524		*		*
Chikusei City	Spinach					4/6 house	110	4/11 house	39
							12		17
Yachiyo Town	Spinach	3/20 house	1,600			4/6 house	320	4/11 house	60
			125				58		*

\* Undetected. Values underlined exceed the provisional regulation criteria.

## Is TEPCO Serious about Restarting Kashiwazaki-Kariwa-3 within the Year?

**A**t a press conference on April 13, President Masataka Shimizu of Tokyo Electric Power Company (TEPCO) stated that the company aimed to restart Kashiwazaki-Kariwa-3 (KK-3) within the year. On the following day, April 14, "The Association of Prefectural Citizens to Protect Lives and Communities from Nuclear Power Plants" protested against Mr. Shimizu's statement and demanded a retraction, citing five reasons.

As reported in the last issue, TEPCO floated the concept of "design load for earthquakes" in debate on KK-3 in the "Sub-Committee on Equipment Integrity and Seismic Safety" on March 8. When committee member Masahiro Koiwa asked for details, the TEPCO official in charge was evasive. He reportedly admitted that the concept was based on confidential materials from the plant manufacturer and that there were some aspects that TEPCO itself was not familiar with. Thus there is a risk of "approval by engineering judgment" without thorough debate.

Nearly six weeks have passed since the Fukushima Daiichi Nuclear Power Station (Fukushima I), also operated by TEPCO, went out of control on March 11. TEPCO is still unable to "cool down" the reactor and "seal in the radiation."

On April 17, TEPCO announced a roadmap projecting that it would take six to nine months to stabilize reactors Fukushima I-1 to 3. However, it has been unable to finalize the work plan as it has only a very poor grasp of the situation and the radiation levels in the reactors are too high to proceed with the work. The roadmap is nothing more than TEPCO's wishful thinking. How long will this situation continue? As long as it does, we will be forced to live with the fear of radiation.

The radiation released from "Fukushima" (as the plant is often referred to in the Western media) has already spread worldwide. Nine days after discharge, it traversed North America and spread to the entire northern hemisphere. By April 13, it had spread to the Asia-Pacific region in the southern hemisphere, and radiation was detected in Australia, Fiji, Malaysia, Papua New Guinea,

and other places.

TEPCO has committed a truly grave crime. It is now obvious that operating a nuclear power plant is beyond the capability of a single power company. The nuclear chain reaction has proven to be "fire from heaven" that cannot be extinguished even by a mass mobilization of plant engineers, the military and all other forces.

### No more excuses that it was "unexpected" - a call for thorough debate and deliberation

Ever since March 11, we have heard countless excuses that the devastating earthquake and subsequent massive tsunami were "unexpected." But what does it mean to say they were "unexpected"? The arguments of the experts who have promoted nuclear power over the years are no more than lame excuses.

What impact did the Chuetsu-oki Earthquake have on nuclear power plants? How large is the next earthquake expected to be? Will Kashiwazaki-Kariwa NPP be able to withstand it when it comes? Will it be possible to "stop the power plant, cool it down and contain the radiation"? These are some of the issues concerning local citizens' "safety and security" that are being debated by the technical committee of Niigata Prefecture and its two sub-committees. Niigata Prefecture has undoubtedly tried to address these issues quite proactively. "The Niigata method" of forming two sub-committees, each with a number of civic-minded academics, was widely acclaimed. There were expectations that this would bring some fresh air to the stuffy "nuclear power club" comprised of pro-nuclear government officials, industry insiders and academics beholden to them. Unfortunately, the expectations have had to be toned down in the subsequent three years. The technical committee has been found to be incapable of functioning. Debate in the two sub-committees, where the substantive discussion needs to occur, has often been cut short by "engineering judgment."

Observers at the committees are worried that debate on many topics has been cut short midway, leaving unresolved ambiguities. Doubts

about the safety margins, plastic strain, the length of the fault lines along the eastern margin of the Sado Basin, the strength of the casing for the recirculation pump of KK-7, and other issues have remained unresolved from the start. The following are but a few examples from recent discussions:

- The reactor buildings and turbine buildings for KK-1 to 7 have continued to rise and sink erratically.
- Not only are the fuel rods in KK-7 damaged in many places, but the control rods also have many cracks.
- The exhaust stacks are leaning to the side due to tilting of the foundations. This is most prominent at KK-1, 2 and 3.
- The earthquake-resistant wall of KK-5 has many cracks, and the hangers supporting the pipework are dislocated at a number of locations.
- Will the stabilizer for the nuclear reactor containment vessel of KK-5 really improve safety during earthquakes?
- Is safety from tsunamis really adequate at plus 2 meters and minus 3.5 meters?

"We don't know why. It is a matter of science. The criteria are not wrong. It will not impact safety. The criteria have been adopted by the academic societies, etc., on the basis of many years of experience. There is no need to reopen the debate on the criteria." These views of the committee members in favor of nuclear power have held sway.

### **Restart the entire debate from scratch**

Proponents of nuclear power plants begin with the presumption that the plants need to be built. "Assumptions" are made on the premise that the plants are to be built. Criteria are set at levels convenient for this purpose. They were based on economic efficiency and engineering judgment, and the option of refraining from setting criteria if scientific investigation had not resolved the issue was not considered.

In this light, how are we to understand the initial apology in the "Urgent Recommendations regarding the Accident at the Fukushima Nuclear Power Station" that was signed jointly by 16 leading proponents of nuclear power on March

31?

It states, "Firstly, as leading proponents of the peaceful use of nuclear power, we profoundly regret this accident and deeply apologize to the citizens of our country." It goes on to make some inferences about the state of the accident at the time, and concludes by saying, "We strongly demand that the government urgently build a robust framework for a nation-wide effort to respond to the nuclear power plant accident in Fukushima." The signatories include two former heads of the Nuclear Safety Commission, three former presidents of the Atomic Energy Society of Japan, and three former commissioners of the Nuclear Safety Commission. Former head of the Nuclear Safety Commission, Shojiro Matsuura, who attended the announcement of the recommendations, expressed his regrets by saying "no apology will suffice for this problem; as humans who have failed, we wanted to consider ways of resolving this problem for society." (Sankei Shimbun, April 1) However, the recommendations are only statements of principles and are lacking in specifics. They are similar to TEPCO's roadmap.

I fear that it may already be too late, but if it is still possible to avoid an emergency, the sub-committees in Niigata should learn some lessons from "Fukushima" and engage in robust and thorough debate. If there is a proper debate, free from deception, they must certainly reach the conclusion that KK NPP must be closed down. I have recently given some in-depth interviews to Western journalists. Obviously, they wanted to know about "Fukushima," but their other big concern was the future of KK.

April 20

Yukio Yamaguchi (CNIC Co-Director)

***Statement by Scientists and Engineers Concerning Fukushima Daiichi NPP (no.2)***  
*by The Group of Concerned Scientists and Engineers Calling for the Closure of the Kashiwazaki-Kariwa Nuclear Power Plant*  
<http://cnic.jp/english/topics/safety/earthquake/fukukk7apr11.html>

## “Conserve the Sea of Miracles” International Symposium Held to Evaluate the Ecosystem of the Tanoura Cove, Proposed Site of the Kaminoseki NPP

**A**n international symposium entitled “The Japanese Murrelet and Biodiversity in Kaminoseki” was held in Hiroshima on April 10. Influenced by the Fukushima Daiichi nuclear disaster resulting from the earthquake off the Pacific coast of northeastern Japan on March 11, 2011, this symposium was at one time under threat of cancellation. However, the organizer, the Association for the Preservation of Nagashima’s Nature, enthusiastically convinced that this was exactly the time to send a resounding ‘NO’ to nuclear power plants, was able to organize the symposium successfully. More than 300 people gathered and listened to the presentations with keen interest.

Ten presenters appeared at the symposium, of whom four were from overseas. The presenters included Harry R. Carter, seabird researcher from Canada; Darrell L. Whitworth, wildlife researcher from the U.S.; Karen Reyna, resource protection coordinator from the U.S.; Nils Warnock, National Audubon Society Alaska Office, U.S.; Yutaka Nakamura, University of Miyazaki, Japan; and Tomohiko Iida, Kyushu University, Japan. These murrelet and shorebird experts from Japan and North America gave presentations on such topics as research on the breeding of these birds and their biological characteristics, as well as the development of new research methods and implementation of political measures for their protection.

Murrelets are decreasing in population, and face many problems, including capture by fishermen, harm from nonnative species such as mice, oil spills, chemical pollution of the marine environment, and climate change. The Japanese murrelet is designated as vulnerable on the Japanese Ministry of Environment’s Red List. Its worldwide population is five thousand, most of whom live in Japan. Since the Japanese murrelet spends almost all of its lifetime over water, the biological characteristics of the bird were previously unknown except during its breeding period, the only time it spends on land. It is also a small bird (24 cm in overall length), making it difficult to find. However, research by groups

such as the Association for the Preservation of Nagashima’s Nature, the Ecological Society of Japan, and the Ornithological Society of Japan found that the Japanese murrelet lives in the Seto Inland Sea, including around Kaminoseki, all year round, and research was begun to clarify its biological characteristics, such as brooding period, molting period, courtship behavior, and distinction between adult and young birds. The possibility that the Japanese murrelet breeds in this area was pointed out, and the importance of taking protection measures was confirmed.

Regarding the Kaminoseki Nuclear Power Plant project (two 1,380 MW ABWRs), the Governor of Yamaguchi Prefecture, Sekinari Nii, granted land reclamation permission to Chugoku Electric Power Company based on the Public Waters Reclamation Law in October 2008, and reclamation work is ongoing in Tanoura Cove, the proposed site of the plant. Chugoku Electric Power Co., Inc. submitted an application for a reactor establishment license to the Nuclear and Industrial Safety Agency in December 2009, and the application is currently undergoing a safety review. After the occurrence of the Fukushima Daiichi nuclear disaster, Kaminoseki Mayor Kashiwabara and Yamaguchi Governor Nii requested the company to exercise greater prudence concerning the project. The response of Chugoku Electric to this request is paradoxical. The company temporarily stopped reclamation work on March 15, while continuing on-site work for additional geological research, such as research pit boring, to pass the safety review. “The legal system that allows land reclamation before the grant of permission for reactor establishment is problematic,” Governor Nii said on March 25, indicating a flaw in the current system while laying aside his own responsibility for granting the reclamation permission. Local residents’ groups, such as the People of Iwaishima’s Association against the Kaminoseki Nuclear Station, plan to intensify their efforts to stop all construction and research work immediately and to bring the entire Kaminoseki Power Plant project to an irrevocable end.

Masako Sawai (CNIC)

# 25 Years after the Chernobyl Nuclear Accident

## Welcoming to Japan a guest who still lives within the highly polluted region

**25** years have now passed since the nuclear accident at Chernobyl. The Japan Congress Against A- and H-Bombs (Gensuikin), the Consumers Union of Japan, Femin Women's Democratic Club, and CNIC jointly established a 'Coordinating Committee for the Chernobyl Campaign' to invite a person affected by the Chernobyl accident to come to Japan to give a series of talks to citizens all over the country. The guest who was invited was Mr. Vdovichenko Pavel, who lives in Novozybkov in the Bryanskay region of Russia.

Novozybkov is 180km from the Chernobyl NPP and 400km from Moscow, and at the time of the accident was polluted with radioactive material at average of 17 curie/km<sup>2</sup>. Even after countermeasures such as turning over the soil, the average is still 15 curie/km<sup>2</sup> today (1 curie = 37 billion becquerels). The people should have been relocated, but issues such as a lack of relocation funds and the presence of senior citizens have resulted in many people continuing to live in the area. Mr. Pavel and his friends and family also chose to live in Novozybkov and started up an NGO called "Radimichi - Children of Chernobyl" (<http://xn--80aimaawy5d.xn--p1ai/?glang=en>).

As aid did not reach the city from the government and the best doctors and teachers left the area, Radimichi collaborated with German doctors and began to carry out a range of positive activities for the community such as thyroid gland checkups, rehabilitation for the disabled, day care services for senior citizens, youth circles, summer camps for children away from the polluted area, and so on.

Of the population of 45,000 at the time, 5,000 people left the city following the accident, many returning because they were unable to endure the discrimination in the area to which they relocated. The population of Novozybkov is now 42,500. However, even today, 25 years after the accident, life there is still hard. The once-thriving industrial manufacturing and agricultural processing plants have pulled out, and new companies have not come in. The agricultural produce of the area has not been able to regain its competitiveness. Since the agricultural produce, wild nuts, fish and so on are



polluted, it is necessary to travel long distances to buy food, though poor people cannot do this and have little option but to continue to eat polluted food. Illnesses besides thyroid cancer are also prevalent and it is reported that health problems are appearing among young children not yet born 25 years ago.

On March 11, the day after Mr. Pavel completed his visa application in order to travel to Japan, the Fukushima Daiichi NPP was struck by an earthquake and tsunami, causing a huge accident in which large amounts of radioactive material were released. We were unsure whether or not to go ahead with the plan to invite Mr. Pavel to Japan, but received a message from him saying that on the contrary he wished to tell the Japanese about his experiences at this time. Thus, while talks in Fukushima and Miyagi had to be cancelled, we were able to hear him speak in Tokyo, Hokkaido, Kyushu, Yamaguchi and Osaka. More than 4,500 people turned out for the demonstration in Tokyo, and at every venue far more people turned up than for the Chernobyl remembrance day in previous years. It is a great shame that the nuclear accident that should never have happened after Chernobyl has occurred in Fukushima, but I hope it will be possible to move forward with many people toward a nuclear phase-out to ensure that a similar tragedy will never happen again.

Nozomu Nagai (CNIC)

*Joint Statement on the Fukushima Daiichi Nuclear Disaster on the Occasion of the 25th Anniversary of the Chernobyl Nuclear Disaster*  
<http://cnic.jp/english/topics/safety/earthquake/fuku26ap11.html>

## Group Introduction

### *Hairo Action Fukushima*

By Saeko Uno\*

The Hairo Action Fukushima 40-year Planning Committee was formed in November 2010 through the participation of like-minded volunteers throughout Fukushima Prefecture. *Hairo* is the Japanese word for 'reactor decommissioning.'

The members are all highly individualistic people of different generations and backgrounds in activism; people who have lead the movement against the Fukushima nuclear power plants (NPPs) for many years, people who have come from Tokyo seeking a subsistence lifestyle, community-building NPO members, city councilors, teachers, housewives bringing up children, and so on. With a deep wish for the movement to be passed on to the younger generation, the organization is structured so that a young committee chairperson and a young executive officer are backed up by a vice-chairperson and a vice-executive officer with greater experience. Preparations for the 40-year event moved cautiously forward in this way.

Although it has ten nuclear reactors on its coastline, Fukushima is shrouded in an atmosphere where it is impossible to speak freely about NPPs and there is overwhelming indifference to their problems. Our original plan was to initiate a year of activity from March 26, 2011, the day when Unit 1 of Fukushima Daiichi NPP reached the 40-year mark since starting up, and take up the problem of the Fukushima NPPs in a variety of ways, disseminate information and engage in different kinds of actions. We planned to hold a large opening event on March 26 and 27 under the title of "40 Years of the Fukushima NPPs and Our Future."

On March 11, however, we were struck by the great earthquake disaster and the thing that we had feared most of all, a severe nuclear accident, became a reality. We were all suddenly thrown, like it or not, into the harsh "age of decommissioning." The need to decommission because of a huge accident was the one decommissioning scenario that we had most of all wished to avoid. Amid the swirling confusion of the nuclear disaster, and with our bitter disappointment at not having been able to avoid this scenario, the desolation of having our hometowns, our livelihoods and our future totally stolen away from us, as well as the fear of radiation, most of the committee members

evacuated to different areas, and the opening event was postponed. I called for everyone to "come together again without fail, but until then for everyone to carry out their own actions for *hairo* wherever they were."

On March 25, the Fukushima committee members who had scattered to different locations held simultaneous press conferences with collaborators in the places they had evacuated to in ten prefectures across the country. In an emergency statement, we demanded the immediate evacuation of pregnant women and children, an expansion of the evacuation zone, policies for the maximum protection against radiation and full disclosure of information for people in danger zones, for the decommissioning of reactors and a drastic review of the country's nuclear power policy. We also called on the people of the world to look unflinchingly at the ongoing realities of Fukushima and to take any action that they could.

We have lost the hometowns that we had before March 11, and our dear companions have been scattered all over the country. But we will begin again from here. We will reconnect and become a part of a much larger and more complex network of people. Our radiation-polluted hometowns will never return to their former state, but we will stand face to face with the negative heritage of nuclear power and rise again as a region determined to make a definitive break with the atom.

Now is indeed the time for the world to make up its mind to phase out nuclear power. We, the Hairo Action Fukushima, will continue to work hand in hand with the people of the world to prevent any expansion of the current disaster and any repeat of this terrible tragedy.



Poster for the opening event of Hairo Action

\*Saeko Uno is committee chairperson of Hairo Action

## Examining the Electricity Supply Plans for FY2011

The Electricity Business Act stipulates that electricity utility companies must submit a "Supply Plan" to the Minister of Economy, Trade and Industry annually before the beginning of each fiscal year. However, neither Tokyo Electric nor Tohoku Electric had made their submissions as of April 16 because conditions had not allowed them to complete the plans. Obviously this was due to the earthquake off the Pacific coast of northeastern Japan on March 11, 2011 and tsunami.

The major earthquake and subsequent nuclear accident that occurred at TEPCO's (Tokyo Electric Power Co.) Fukushima Daiichi Nuclear Power Station (Fukushima I) ought to be affecting the nuclear plant construction plans of other utility companies, yet these companies submitted their reports as if nothing had changed. Perhaps they felt they could simply alter them next year seeing as these reports are little more than formalities, the details contained in them being consistently put off every year or every other year.

In fact, the construction plans for Tohoku Electric's Namie Odaka plant and Higashidori-2 in particular, and TEPCO's Fukushima I-7 and 8 have as a rule always been delayed to the following year. Even the Higashidori-1, for which construction began in January 2011, had been a regular repeat performer on the delay list. Even without the Fukushima I accident, the plan would certainly have been extended again for one year. Following the accident, however, construction at Higashidori-1 has been stopped for both the development of the power source and construction of the main building.

As plans have not been forthcoming from both Tohoku Electric and TEPCO, this year's plan delays have been limited to a rescheduling of the start of operations for Chugoku Electric's Shimane-3 from December of this year to March 2012, and similar delays for Japan Atomic Power's Tsuruga-3 and 4, currently undergoing safety screening, with the former being changed from March 2016 to July 2017 and the latter from March 2017 to July 2018. In

fact, there is one more alteration, the planned Chubu Electric's Hamaoka-6. Originally scheduled to start operations after FY2020, it was rescheduled to some time after FY2021. A note in parentheses states a target of "within several years of 2018," so it is possibly being delayed more than one year to some time between FY2021 and FY2023.

The delays at Shimane-3 are due to trouble with the control rod drive mechanism. The plan was for the mechanism to be overhauled by the manufacturer, Hitachi, but the Hitachi factory is currently shut down due to the March 11 earthquake. The start of operations for the reactor will likely be delayed further.

The delays at Tsuruga-3 and 4 are due to a protraction of safety screening due to the question of earthquake resistance. Construction work scheduled for October of last year could not be started and delays were already announced at the time. These delays will likely continue as a result of the March 11 earthquake.

Under question is Kyushu Electric's planned Sendai-3 reactor. The start of operations, originally scheduled for 2019, has now been scheduled for December of that year, with the start of construction being moved from FY2013 to March 2014. It is not clear whether this represents a rescheduling or not.

Kyushu Electric's president announced on April 11 that they "do not intend to adhere to the current schedule", saying that preparations will be postponed for the time being.

While Chugoku Electric has stopped preparatory construction on Kaminoseki-1, they have not altered their plan, which stipulates the start of construction in June 2012 and the start of operations in March 2018. The schedule for Kaminoseki-2 is also unchanged, with the start of construction scheduled for FY2017 and the start of operations for FY2022. In fact, the plans for both had already just been updated the previous year with a two-year delay.

Baku Nishio (CNIC Co-Director)

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