

The Atomic Bomb and “Peaceful Use of Nuclear Energy” 原子爆弾と「核エネルギーの平和利用」

Yuki Tanaka

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A Japanese translation is [available here](#).

Yuki Tanaka

The devastating 9.0 earthquake that hit Japan on March 11, together with the following massive tsunami, completely destroyed the picturesque northeast coast of Japan's main island, taking potentially tens of thousands of lives and creating hundreds of thousands of refugees.

Along this stretch of utter destruction sit four nuclear power stations, comprising a total of 15 reactors, within a distance of about 200 kilometers. Of these, the Fukushima No.1 nuclear power station, operated by the Tokyo Electric Power Company (TEPCO), is the largest, comprising six nuclear reactors. Until now, TEPCO, Japan's largest power company, proudly boasted of the robustness of the containment vessels of these reactors, claiming that they were made utilizing the same technology originally developed to produce the main battery of the world-largest naval artillery ever produced, mounted on the gigantic battleship, Yamato, the pride of the Japanese Imperial Navy, which U.S. forces destroyed toward the end of the Asia-Pacific War. TEPCO claimed that the nuclear reactors would safely stop, then automatically cool down and tightly contain the radiation in the event of an earthquake, and that there would therefore be no danger that earthquakes would cause any serious nuclear accident. The vulnerability of nuclear reactors to earthquakes was already

evident, however, when TEPCO's Kashiwazaki-Kariwa plant on Japan's northwest coast caused several malfunctions, including a fire in a transformer, and a small quantity of radiation leaked into the ocean and the atmosphere following a magnitude 6.8 earthquake that hit this region in July 2007. Despite this serious accident, TEPCO officials still arrogantly boasted of their "world-best nuclear power technology."

On March 23, 2010, [Kyodo News provided this update](#) on the status of the Fukushima Daiichi Reactors crippled by the quake and tsunami.

Fukushima Daiichi plant

- Reactor No. 1 (Operation suspended after quake)
Partial melting of core, cooling failure, vapor vented, building housing containment of reactor damaged by hydrogen explosion, roof blown off, seawater being pumped in, work to restore electric power in progress.
- Reactor No. 2 (Operation suspended after quake)
Damage to reactor containment structure feared, cooling failure, seawater being pumped in, fuel rods fully exposed temporarily, vapor vented, building housing containment of reactor damaged by blast at adjacent reactor No. 3, blast heard near suppression chamber of containment vessel, access to external power restored Sunday, steam seen rising Monday, pool holding spent-fuel rods filled with water on Tuesday with water temperature at 51°C.
- Reactor No. 3 (Operation suspended after quake)
Partial melting of core feared, cooling failure, vapor vented, seawater being pumped in, building housing containment of reactor badly damaged by hydrogen explosion, seawater dumped over spent-fuel storage pool by helicopter Thursday, water sprayed at it from the ground for six days through Tuesday, workers temporarily forced to evacuate due to grayish smoke seen billowing from roof on Monday, lighting back on in control room on Tuesday.
- Reactor No. 4 (Under maintenance when quake struck)
No fuel rods in reactor core, renewed nuclear chain reaction feared at spent-fuel storage pool, fire at building housing containment of reactor, only frame remains of reactor building roof, temperature in the pool reached 84°C on March 14, water sprayed at pool for three days through Tuesday.
- Reactor No. 5 (Under maintenance when quake struck)
Some fuel rods left in reactor core, cooling in spent-fuel storage pool resumed Saturday, cold shutdown at reactor on Sunday, access to external power restored, power source switched to external power from emergency power on Monday.
- Reactor No. 6 (Under maintenance when quake struck)
Some fuel rods left in reactor core, emergency power generator and cooling functions restored Saturday, cold shutdown at reactor on Sunday.
[See the [CNN summary](#) on the same date]

They're not boasting anymore. Immediately after the earthquake violently shook Fukushima and the tsunami surged and damaged many buildings of the power station, the myth of the "safe and durable reactor," a myth promulgated by TEPCO, was instantly shattered, calling into question a strategy that has led nuclear plants to account for fully thirty percent of Japan's electric power. At this writing, half of the six reactors appear to be on the verge of melting down, and one of the containment buildings has caught fire due to spent fuel rods combusting. The radiation level in the vicinity of the power station is extremely high, and it has begun to spread as far as Tokyo and Yokohama. Regardless of whether the damage is ultimately contained, an unprecedented nuclear disaster is unfolding, highlighting the multiple problems associated with radioactivity.



Fukushima explosions

What went wrong with Japan's nuclear industry? The Japanese are often said to be hypersensitive about nuclear issues because of the experience of nuclear holocaust. How could they not be? On the morning of August 6, 1945, an atomic bomb instantly killed 70,000 to 80,000 civilian residents of Hiroshima city and by the end of that year, 140,000 residents of that city had died as a result of the bombing. Another 70,000 were killed in Nagasaki. Many others have subsequently died, often after experiencing a lifetime of suffering, or are still suffering from various diseases caused by the

blast, fire and radiation.

Yet opposition to nuclear energy has never been strong in Japan. Why? It is true that the Japanese, in particular the citizens of Hiroshima and Nagasaki, are highly conscious of the danger of nuclear weapons. A-bomb survivors, who know well the terror of the bomb and who fear the long-lasting effects of radiation, have therefore been the vanguard of the anti-nuclear weapons campaign. Despite this, however, many A-bomb survivors and anti-nuclear weapon activists have so far been indifferent to the nuclear energy issue. Despite a number of vibrant local movements contesting the construction of nuclear plants, anti-nuclear energy campaigners overall have long been marginalized.

For example, a small group of anti-nuclear energy activists in Hiroshima have been actively involved in the movement to prevent the Chugoku Electric Power Company (CEPCO) from building a nuclear power station near Kaminoseki, a beautiful fishing village on Japan's Inland Sea, about 80 kilometers away from Hiroshima City. However, while working closely with local fishermen at Kaminoseki, they have had virtually no support from any A-bomb survivors' organizations. Nor have either the former or current mayors of Hiroshima, who are widely known as staunch advocates of the abolishment of nuclear weapons, ever supported this local anti-nuclear power movement. Indeed they never expressed concern about the danger of nuclear power accidents. That made it easier for CEPCO, over strong opposition from anti-nuclear energy activists in solidarity with the fishermen of Kaminoseki, to start construction work early this year. (The company was, however, forced to temporarily stop construction work on the Kaminoseki site on the day of the earthquake, an important indicator that the nuclear power industry and the government will have great difficulty resuming work on nuclear plants following the disaster.)

There are many reasons for this peculiar dichotomy in the antinuclear movement in Japan. One reason is that postwar Japanese governments strongly promoted nuclear science, particularly after U.S. President Dwight D. Eisenhower began emphasizing the "atoms for peace" program in 1953. The strong feeling in Tokyo, among politicians and scientists alike, was that Japan had neglected scientific research during the war. Indeed, many believed their nation was defeated in World War II by American technological prowess, exemplified above all by the United States' evident mastery of nuclear physics.

This attitude, together with a deep anxiety about the lack of natural energy resources in a nation that relies on imports for 100 percent of its oil and is the world's largest importer of coal, led to Japan's embrace of nuclear energy. Particularly since the late 1960s, the Japanese government has wielded pork-barrel policies to secure the approval of local communities in remote areas for the construction of nuclear-power plants in their backyards. It allocated huge sums to build public facilities such as libraries, hospitals, recreation centers, gymnasiums and swimming pools in areas where local councils accepted a nuclear power station. Meanwhile, power companies paid large sums of money to landowners and fishermen to force them to relinquish their properties and fishing rights. Unsurprisingly, political corruption soon became part of the package. For example, construction companies provided large kickbacks to politicians in return for receiving contracts to build the above-mentioned local facilities. All the while, the government and power companies promoted the myth that nuclear power is clean and safe Japan, thereby marginalizing the anti-nuclear energy movement.

Although for a short period following the Chernobyl accident of 1986, sending shock waves around the world, Japan's anti-nuclear power movement enjoyed nationwide popular

support, it quickly faded following campaigns by the government and the power companies. Despite many accidents since, their seriousness was effectively covered up by altering data records and falsifying reports to the government. Consequently, there are now 17 nuclear power stations around the earthquake-prone Japanese archipelago, comprising 54 nuclear reactors that provide 30 percent of Japan's total electricity generating capacity.



Map of Current Nuclear Power Plants

The anti-nuclear movement has been warning of the dangers of a devastating nuclear accident for years, but this has always been met with assurances of the safety of the reactors by electric power companies and the government. The Fukushima accident has brought to fruition all the fears and predictions previously expressed. In the same way that the atomic bomb indiscriminately killed hundreds of thousands of civilians, this nuclear reactor accident may be responsible for indiscriminate suffering and death of numbers which cannot at this time be known, but may play out over the coming decades as a consequence of

radiation pollution. For this reason, a nuclear power accident can be called an "act of indiscriminate mass destruction," and in this sense, it appears that Japan and the Japanese people twice in 65 years will become the victims of "nuclear mass destruction."

Australia and Canada are the two largest uranium suppliers for Japan. Thirty three percent of Japan's uranium import comes from Australia and twenty seven percent from Canada. Australia is faced with the decision of whether to continue exporting uranium even as certain politicians insist that it cannot afford to risk introduction of nuclear power. Surely it is hypocritical to avoid the dangers at home, while benefitting from the export of the cause of this disaster. In the same vein, these politicians advocate the need to abolish nuclear weapons, but refuse to ban the mining of uranium.

Japan is not the sole nation responsible for the current nuclear disaster. From the manufacture of the reactors by GE to provision of uranium by Canada, Australia and others, many nations are implicated. We all should learn from this tragic accident that human beings cannot co-exist with nuclear power, whether in the form of weapons or electricity. The risks and the costs, in dollar terms, not only of nuclear accidents but of the still unresolved problems of disposal, in the destruction both of human beings and the environment are excessive.

This catastrophic event could potentially be the catalyst needed to drastically reform Japan's existing socio-economic structure and way of living. As a positive outcome, it could provide the wake-up call and opportunity to redirect the nation on a new course that emphasizes green energy development and the end of reliance not only on nuclear power but also the phased elimination of oil and coal as primary energy sources. In the same way that Japan's unique Peace Constitution evolved from the ruins of World War II, this calamity could be

used to initiate a hitherto impossible, totally new, peaceful and environmentally harmonious society. Such an optimistic outcome is dependent on the determination and actions of the Japanese people, supported by the whole-hearted assistance of those outside Japan.

March 21, 2011.

This is a revised and expanded version of an article that appeared in Foreign Policy.

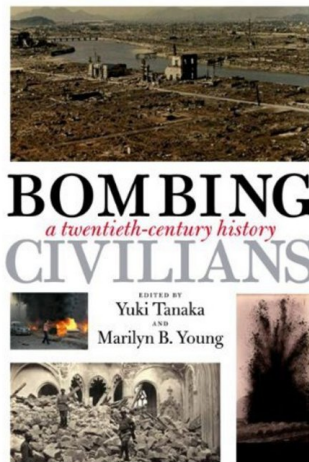
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Recommended Citation: Yuki Tanaka, The

Atomic Bomb and "Peaceful Use of Nuclear Energy," *The Asia-Pacific Journal* Vol 9, Issue 13 No 2, March 28, 2011.

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