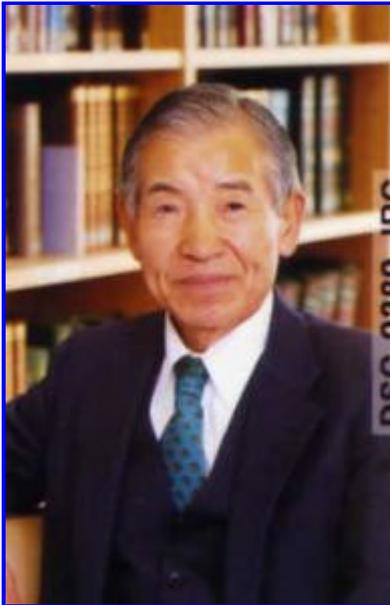


Fukushima Daiichi Site: Cesium-137 is 85 times greater than at Chernobyl Accident

April 3, 2012

Empfehlen

6522 Empfehlungen. [Registrieren](#), um die Empfehlungen deiner Freunde sehen zu können.



Ambassador Mitsuhei Murata

[*Ed: This page was updated on 4/5/12 to reflect corrected calculations]

By Akio Matsumura

[Read this article in Japanese.](#)

Japan's former Ambassador to Switzerland, Mr. Mitsuhei Murata, was invited to speak at the Public Hearing of the Budgetary Committee of the House of Councilors on March 22, 2012, on the Fukushima nuclear power plants accident. Before the Committee, Ambassador Murata strongly stated that if the crippled building of reactor unit 4—with 1,535 fuel rods in the spent fuel pool 100 feet (30 meters) above the ground—collapses, not only will it cause a shutdown of all six reactors but will also affect the common spent fuel pool containing 6,375 fuel rods, located some 50 meters from reactor 4. In both cases the radioactive rods are not protected by a containment vessel; dangerously, they are open to the air. This would certainly cause a global catastrophe like we have never before experienced. He stressed

that the responsibility of Japan to the rest of the world is immeasurable. Such a catastrophe would affect us all for centuries. Ambassador Murata informed us that the total numbers of the spent fuel rods at the Fukushima Daiichi site excluding the rods in the pressure vessel is 11,421 (396+615+566+1,535+994+940+6375).

I asked top spent-fuel pools expert Mr. Robert Alvarez, former Senior Policy Adviser to the Secretary and Deputy Assistant Secretary for National Security and the Environment at the U.S. Department of Energy, for an explanation of the potential impact of the 11,421 rods.

I received an astounding response from Mr. Alvarez **[updated 4/5/12]**:

In recent times, more information about the spent fuel situation at the Fukushima-Dai-Ichi site has become known. It is my understanding that of the 1,532 spent fuel assemblies in reactor No. 304 assemblies are fresh and unirradiated. This then leaves 1,231 irradiated spent fuel rods in pool No. 4, which contain roughly 37 million curies (~1.4E+18 Becquerel) of long-lived radioactivity. The No. 4 pool is about 100 feet above ground, is structurally damaged and is exposed to the open elements. If an earthquake or other event were to cause this pool to drain this could result in a catastrophic radiological fire involving nearly 10 times the amount of Cs-137 released by the Chernobyl accident.

The infrastructure to safely remove this material was destroyed as it was at the other three reactors. Spent reactor fuel cannot be simply lifted into the air by a crane as if it were routine cargo. In order to prevent severe radiation exposures, fires and possible explosions, it must be transferred at all times in water and heavily shielded structures into dry casks. As this has never been done before, the removal of the spent fuel from the pools at the damaged Fukushima-Dai-Ichi reactors will require a major and time-consuming re-construction effort and will be charting in unknown waters. Despite the enormous destruction caused at the Dai-Ichi site, dry casks holding a smaller amount of spent fuel appear to be unscathed.

Based on U.S. Energy Department data, assuming a total of 11,138 spent fuel assemblies are being stored at the Dai-Ichi site, nearly all, which is in pools. They contain roughly 336 million curies (~1.2 E+19 Bq) of long-lived radioactivity. About 134 million curies is Cesium-137 — **roughly 85 times the amount of Cs-137 released at the Chernobyl accident** as estimated by the U.S. National Council on Radiation Protection (NCRP). The total spent reactor fuel inventory at the Fukushima-Daichi site contains nearly half of the total amount of Cs-137 estimated by the NCRP to have been released by all atmospheric nuclear weapons testing, Chernobyl, and world-wide reprocessing plants (~270 million curies or ~9.9 E+18 Becquerel).

It is important for the public to understand that reactors that have been operating for decades, such as those at the Fukushima-Dai-Ichi site have generated some of the largest concentrations of radioactivity on the planet.

Many of our readers might find it difficult to appreciate the actual meaning of the figure, yet we can grasp what 85 times more Cesium-137 than the Chernobyl would mean. It would destroy the world environment and our civilization. This is not rocket science, nor does it connect to the pugilistic debate over nuclear power plants. This is an issue of human survival.

There was a Nuclear Security Summit Conference in Seoul on March 26 and 27, and Ambassador Murata and I made a concerted effort to find someone to inform the participants from 54 nations of the potential global catastrophe of reactor unit 4. We asked several participants to share the idea of an Independent Assessment team comprised of a broad group of international experts to deal with this urgent issue.

I would like to introduce Ambassador Murata's letter to the UN Secretary General Ban Ki-moon to convey this urgent message and also his [letter to Japan's Prime Minister Yoshihiko Noda](#) for Japanese readers. He emphasized in the statement that we should bring human wisdom to tackle this unprecedented challenge.

It seems to us that the Nuclear Security Summit was focused on the North Korea nuclear issue and on the issue of common security from a terrorist attack. Our appeal on the need for the independent assessment at Reactor 4 was regarded as less urgent. We predicted this outcome in light of the nature of the Summit. I suppose most participants fully understood the potential disaster which will affect their countries. Nevertheless, they decided not to raise the delicate issue, perhaps in order to not ruffle their diplomatic relationship with Japan.

I was moved by Ambassador Murata's courage in pressing this issue in Japan. I know how difficult it is for a former career diplomat to do this, especially in my country. Current and former government officials might be similarly restricted in the scope of their actions, as Ambassador Murata is, but it is their responsibility to take a stand for the benefit of our descendants for centuries to come—to pass on a world safer than our ancestors passed us.

If Japanese government leaders do not recognize the risk their nation faces, how could the rest of us be persuaded of the looming disaster? And if the rest of us do not acknowledge the catastrophe we collectively face, who will be the one to act?

Tokyo, March 25, 2012

Dear Secretary-General,

Honorable Ban Ki-moon,

I wish to express my heartfelt gratitude for your considerate letter dated 2 March, 2012. Your moral support for a United Nations Ethics Summit will remain a constant source of encouragement for my activities.

Please allow me to pay a tribute to your great contribution to strengthen nuclear safety and security. The current Nuclear Summit in Seoul is no doubt greatly benefiting from the high-level meeting you convened last September.

I was asked to make a statement at the public hearing of the Budgetary Committee of the House of Councilors on March 23. I raised the crucial problem. of NO.4 reactor of Fukushima containing 1535 fuel rods. It could be fatally damaged by continuing aftershocks. Moreover, 50 meters away from it exists a common cooling pool for 6 reactors containing 6375 fuel rods!

It is no exaggeration to say that the fate of Japan and the whole world depends on NO.4 reactor. This is confirmed by most reliable experts like Dr. Arnie Gundersen or Dr. Fumiaki Koide.

Please allow me to inform you of an initiative being taken by a former UN official who is endeavoring to have the Nuclear Security Summit take up the crucial problem. of NO.4 reactor of Fukushima. He is pursuing the establishment of an independent assessment team. I think his efforts are very significant, because it is indispensable to draw the attention of world leaders to this vital issue.

I am cooperating with him, writing to some of my Korean acquaintances that this issue deserves the personal attention of President Lee Myung -bak. I have written today to Prime Minister Yoshihiko Noda. I asked him to consider taking the initiative of mobilizing human wisdom on the widest scope to cope with the Fukushima reactor No.4 problem, fully taking into account the above-mentioned “independent assessment team”.

The world has been made so fragile and vulnerable. The role of the United Nations is increasingly vital. I wish you the best of luck in your noble mission. Please accept, Secretary-General Ban Ki-moon, the assurances of my highest consideration.

Mitsuhei Murata

Former Japanese Ambassador to Switzerland and Senegal

Executive Director, the Japan Society for Global System and Ethics

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