

A fifty-five years' history as a radio-ecologist

Yoichiro OMOMO

Executive Advisor of Institute for Environmental Sciences

Good morning,
Dr. Brechignac, a president of IUR, Ladies and Gentlemen!

I am Yoichiro OMOMO from Japan.

I feel deeply honored by this great award and would like to express my sincere gratitude for your warm wishes and kind support.

In advance of talking my fifty-five years' history, I am sorry to say I found some mistakes of English expression in my abstract. It is my pleasure if you could kindly correct the

I graduated in Faculty of Agriculture, Tokyo (National) University in 1958 when atmospheric atomic bomb explosion tests were still carried out frequently. I completed Master's degree in 1960 and Doctoral degree in 1963 at the same University. My Ph.D. thesis is on Radioactive Contamination of Milk and Milk Products in Japan, including the distribution of fallout radio-nuclides in milk collected everywhere in Japan, their transfer to milk products and how to remove them from raw milk without change of milk quality as far as possible.

My postdoctoral carrier began in the National Institute of Radiological Sciences (NIRS) in 1963.

I was engaged in determination of fallout radioisotopes such as Cs, Sr, Ce and Zr in coastal surface sea water around Japan.

Then my attention was directed to the environmental safety assessment for coastal discharge of radio-nuclides from a spent fuel reprocessing plant in Tokai-mura, Ibaraki prefecture, Japan.

A special committee-so-called invisible laboratory -was organized for the assessment and many scientists from different research field gathered for the discussion.

I took part in the survey on daily seafood consumption of inshore-fishing families living along the coast near the discharge outlet.

I could successfully select possible critical families through the survey and consequently critical seafood and nuclide in the process of internal dose calculation.

In 1990 I moved from Tokai-mura to Rokkasho-mura, Aomori, to establish a new research institute (Institute for Environmental Sciences, IES) aiming to investigate the local environmental safety problems for commercial nuclear fuel cycle facilities, especially the second nuclear spent fuel reprocessing plant.

Just before moving to Rokkasho-mura, I was invited by a national university near Tokyo as a professor of dairy chemistry, chemistry of milk and milk products. I preferred moving to Rokkasho-mura, because I thought I could make use of my thirty-five years experience in Tokyo University and NIRS as a radio-ecologist.

The purposes of the IES are to elucidate various parameters used for preliminary safety assessment of the plant, for which Artificial Climate and Closed Ecology Experiment Facilities (ACEF and CEEF) were constructed and furthermore to study the effect of low-dose rate long-term continuous radiation on the life-span of living organisms in Low-dose Radiation Effects Research Facility (REEF) which was established in 1995.

Ten-years after that, namely in 2005 an Advanced Molecular Bioscience Research Center (AMBIC) was established seeking for a scientific basis for applying the biological effect of low-dose radiation obtained by an animal experiment to human beings.

I played a leading role in construction of all of the above-mentioned experimental facilities and investigation.

I invited distinguished scientists from abroad to IES in order to have useful advice for our investigation.

Changing topics, I would like to mention a terrible disaster occurred on 11 March, 2011 only briefly.

Information on reactors, various countermeasures and distribution of radio-activity around Fukushima No1 nuclear power plant has been given fragmentarily. This may be partly due to political confusion. Just before I

left Japan I heard Japanese Government presented interim report on the nuclear accident to IAEA.

As one of the Japanese radio-ecologists I am disappointed at the present situation, but I believe correct information would be opened in very near future.

Though present situation in the nuclear power plant site are still far from reassuring, the engineers and the scientists concerned have devoted themselves to keep reactors stable conditions and to cope well with the contaminated waste waters.

I would like to show you some figures and pictures concerning the disaster.

The first one is showing map of Japan. Cities and towns on Pacific Ocean side of Tohoku (north-east) area of Japan were reduced to rubble. The fairly long coastal line, about 800 km from Aomori to near Tokyo was attacked by earthquake and tsunami.

The second is showing tsunami rushing to pine grove near coast and houses.

The third is showing a young girl sitting on the road crying, whose family was lost by tsunami.

The fourth is showing the inside of a house attacked by earthquake and tsunami.

The fifth is showing a mother embracing her child scared of after-quakes. The sixth is showing a bird-eye view of Fukushima No.1 nuclear power plant. Ascending vapor can be seen.

The last one is showing estimated situation of fuel in reactor cores. Fuels of the first reactor has perfectly melted down and fallen to bottom of pressure vessel. Those of the 2nd and 3rd are supposed to be mostly in a similar situation (from The Daily Yomiuri, published on May 23, 2011).

The Japanese government invited an IAEA expert team to Fukushima nuclear power plants to investigate how to keep cooling the fuels melted down. According to newspaper, by the end of June an official report will be published. I expect a lot of data are disclosed.

Finally I would like to express my sincere gratitude again for your kind and warm wishes.

Several meetings are waiting for me, so I shall leave here tomorrow morning.

When I come back to Japan, I would like to show this award to my wife at first and then Aomori prefectural governor for his kind support.

Thank you very much for your attention.

Note: Pictures from 2 to 6 are from an extra edition of Asahi graph, 21 May, 2011, Asahi Shinbun Publications Inc.