

One year after the nuclear disaster

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It is March 11, 2012 today, just one year after the terrible earthquakes and TSUNAMIs.

Furthermore, the destruction of four nuclear power plants in Fukushima.

We pray all together at many places all over Japan that the souls of the disasters may rest in peace.

We have in the world three experiences of the accidents of nuclear power plants. They are those of Chernobyl, Three Mile Island, and Fukushima.

I believe we have the responsibility to inform what kind of extra-ordinary events happened and how we are coping with that phenomena regarding urban drainage issues.

1. The fact (in brief)

Three of the four nuclear plants have been melted down. Nuclear ashes have been spread (even today).

2. Influences on water supply works

After the first explosion, spread nuclear ashes fell down with rainfalls into rivers which are the sources of water supply.

Some of nuclear materials were found at the inlet of water purification plants.

However, those materials were almost removed through the treatment of the plant.

Today, the supplied water -tap water- is safe.

The radioactive materials are concentrated into sludge during the water purification process in the plant.

We are now suffering how to dispose it. Today, the sludge is piled up with large bags in the site of each plant.

3. Influences of storm drainage

In the areas of separated sewer system, the contaminated rainwater by the radioactives was collected into stormwater drainage pipes, and discharged directly into rivers, and oceans without any treatment.

In the areas of combined sewer system, most of the contaminated stormwater was conducted to WWTP.

The function of WWTP worked well. The quality of treated waste water is almost no problem.

However, radioactive materials are concentrated into sewage sludge.

Sewage sludge was partly dewatered and partly incinerated. After that dewatered sludge is generally utilized as material of cement, fertilizer (compost), and landfill (of seas or valleys).

Incinerated sludge, that is sludge ash, is used as materials of cement, or landfill.

Dewatered sludge is voluminous than incinerated sludge.

Anyhow, actually, both dewatered and incinerated sludge are containing much of radioactive materials.

That sludge is piled up in the site of each WWTP near the nuclear plants.

In Tokyo, the sludge containing the radioactives is going to landfill the Tokyo Bay.

In other cities, people living near the landfill sites are resisting to bring the sludge.

It is the most serious problem for us how to treat those contaminated sludge.

4. Influences on water environment

Radioactive materials are now on the way to remove by water-jet machines from the surface of the ground and roofs and streets.

The removed materials flow into rivers and seas.

This is the problem.

The radioactive materials in the river are mostly sedimented at the river mouths.

Those sediments are accumulated day by day flowing gradually toward the sea.

5. Influences on the creature in the water

Fish, shells, and other creatures take the radioactive materials with their foods in the water.

They accumulate the contamination in their each body.

Later we may have them as our foods.

6. Influences on the forest

Generally, many leaves are compiled in the forest. It is said that few radioactive materials flows into streams in the mountainous area. The materials remain among the leaves.

Then the materials are absorbed by the trees. It means that trees will be contaminated year by year.

Can we utilize these trees as material of our houses? This is also the problem.

7. Our tasks

We have so much works to do.

We partly succeeded to catch the radioactive materials at the site of water purification plants and waste water treatment plants.

However, much other material escaped from our facilities.

We have to continue to observe their behaviors.

The falls down materials are the origin of the issue of so-called non-point pollutions.

At first it was the point-source pollution, and then spread ashes made non-point pollutions.

Widely opening our eyes, we have to consider whether we can control enough of the nuclear powers.

Solar power generation, wind power generation, and other alternative energy should be much eagerly and seriously developed.

As for my university, we are trying to increase the bio-gas at the WWTP using rice straws.

The rice straw has been a waste to be disposed. Now we are making increased volume of bio-gas using the straws.

It has a good prospect for the future.

As the memory of the day, I tried to talk about recent situation of our fields.

I hope I could report much detail regarding 'the radioactives and urban drainage' some day in the near future.

I hope it does not come to 'a good information' for the similar accident.

The next one should never be happened.

Japanese experiences should be the final in the globe.

I expect nobody would utilize the information of Japanese experiences.

Best regards,

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