Remediation of Affected Areas[1]

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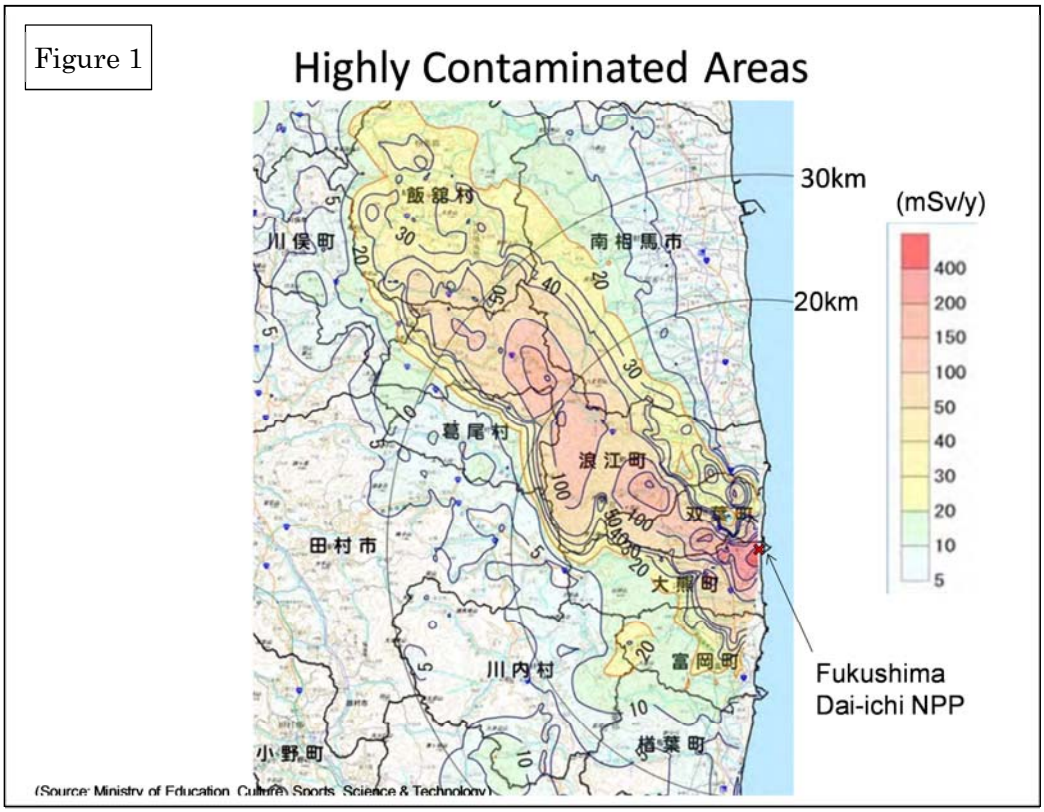
Ladies and gentlemen, it is a great pleasure for me to explain the activities for the remediation of off-site areas affected by the accident, given in the second report of the Government of Japan to the IAEA on the Accident at TEPCO's Fukushima Daiichi NPP. As is well known already, a wide area around Fukushima Dai-ichi NPP was contaminated by the large releases of radioactive material during the accident. Based on the results of various radiation monitoring activities, we have identified highly contaminated areas as shown in Figure 1. In these days major contaminant is Cesium isotopes, of which half-life is about 2 years in the case of Cs -134 and 30 years in the case of Cs-137.

Figure 1




[1] Presented at "Briefing on the Accident at TEPCO's Fukushima Nuclear Power Stations: Progress and Future Actions" held at the occasion of **55TH IAEA GENERAL CONFERENCE**, on September 19, 2011 at ACV, Hall E2.

To decrease existing and potential annual exposures of a people due to the contamination, we should pursue intervention such as a) reducing the number of people exposed to the contamination, b) modifying pathways of contaminant to a people and c) removing existing radioactive material by decontamination.

In the optimization of such intervention activities, we should consider avertable doses, radiological risks, environmental effects, risks to workers, economic costs, the generation of secondary waste, anxiety of the people living in affected areas, social disruption arising from the restriction, etc.

That said, the priority choices for the Government are a) the restriction of inhabiting in the area where expected annual additional dose is larger than 20 mSv, b) strict shipping control for agricultural products, animal products and marine products through radiological surveys and c) step-by-step decontamination of the land.

The government strategy for decontamination is composed of three directions. The first is to reduce the size of the areas where estimated annual additional exposure is larger than 20 mSv through step by step decontamination activities. As entrance in such areas is restricted, the Government should promote the decontamination in cooperation with municipal governments concerned.

The second is to reduce the annual additional exposure in the areas where it is currently below 20 mSv to below 1 mSv on a long term basis. Tentative goals are to realize at least 50% reduction of the annual additional exposure in two years, giving the highest priority to the pursuance of exhaustive decontamination of children's' environment (schools, play grounds, etc.) with a view to reducing their effective annual additional exposure to 1 mSv as soon as possible.

The government also recommends to pursuing regional decontamination in the case of highly contaminated areas and spot-wise decontamination in the case of relatively low contamination areas, identifying hot spots such as those locations where sludge in the drains or gutters has collected.

The third is to recommend municipalities in the area where annual additional exposure is below 1 mSv to focus decontamination activities on the hot spots.

Key issues in discharging the Government's responsibilities of decontamination in this regard are to assure the fund for decontamination, to promote radiological surveys relevant to area characterization and confirmation of the achievement of decontamination, to prepare decontamination technologies and infrastructure including workers and support the optimization of remediation strategy and plan, and to assure safe execution of activities and safe management of resultant waste. It is also important for the Government to cooperate with local governments in the planning and execution of such activities and to ensure public participation in all activities associated with remediation processes, standing close to the people living in affected areas and sharing their anxiety.

At present the Government is promoting demonstration decontamination projects in evacuated areas, through which the effectiveness of various decontamination approaches is tested, and guides for executing safe, effective and efficient decontamination activities will be established based on the results. It is expected that the Government will plan and promote a large scale decontamination activity before the end of the year, utilizing such guides, in cooperation with the municipal governments so that people can return to home as soon as possible. With regard to agricultural land, Ministry of Agriculture, Forestry and Fisheries has promoted activities to verify the effectiveness of various decontamination technologies to be applied to contaminated agricultural fields. The Ministry also has been preparing guides for such kind of decontamination activities.

In the inhabitation area, municipal governments are leading the planning and the execution of such decontamination activities, setting goals, deciding the objectives and methods of decontamination, actors and places for temporary storage of decontamination waste. Asking experts for advice, municipalities have already established "Decontamination guideline", and have been conducting activities to decontaminate housings, public facilities and schools including play grounds in particular. They are recommending to pursue regional decontamination in the case of highly contaminated areas and spot-wise decontamination in the case of relatively low contamination areas, identifying hot spots such as those locations where sludge in the drains or gutters has collected.

Figure 2 summarizes decontamination activities in schools, which were financially supported by the Ministry of Education and the Ministry of Health, Labor and Welfare.

It was found it necessary to clean various part of school buildings to reduce effective annual radiation doses school boys will receive below 1 mSv.

Figure 2

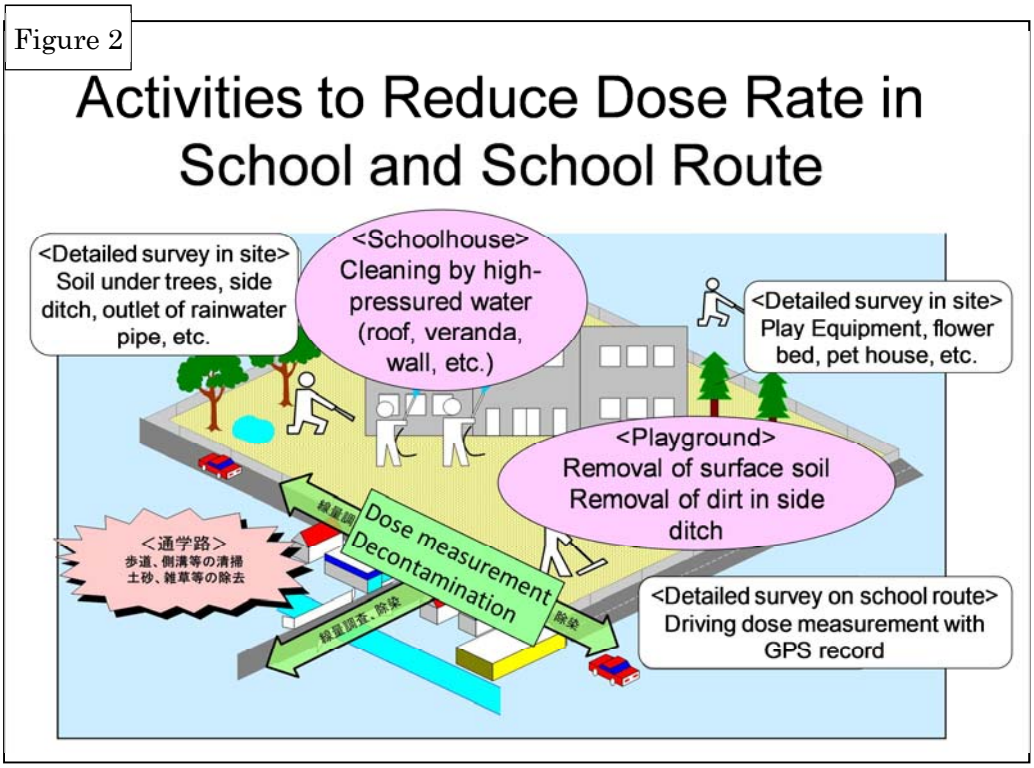



Figure 3, 4, and 5 show some of cleaning activities at various parts of the school house and facilities including swimming pool and roof of private house. Figure 6 shows ways the waste generated by the decontamination activities are stored.

Figure 3

Demonstration of Decontamination in School

(unit: μSv/h)

| Decontaminated area | Decontamination | | Decontamination methods |
|---|---|---|---|
| | Before | After | |
| Scupper on roof of school building | 35 | 1.9 | Removal of soil and fallen leaves, cleaning by scrubber and high-pressured water |
| End of rainwater pipe | 40 | 4.2<br>3.7 | Removal of soil and moss + water washing |
| Overgrown walkway | 25 | 3.8<br>1.2 | Removal of soil and grass + cleaning by high-pressured water |
| Side ditch | 13 | 1.6 | Removal of soil and grass |

(Measured position: 1cm height from soil surface)

Dose measurement

Cleaning by high-pressured water

(Source: Cabinet Office based on Materials in Atomic Energy Commission Meeting)

Figure 4

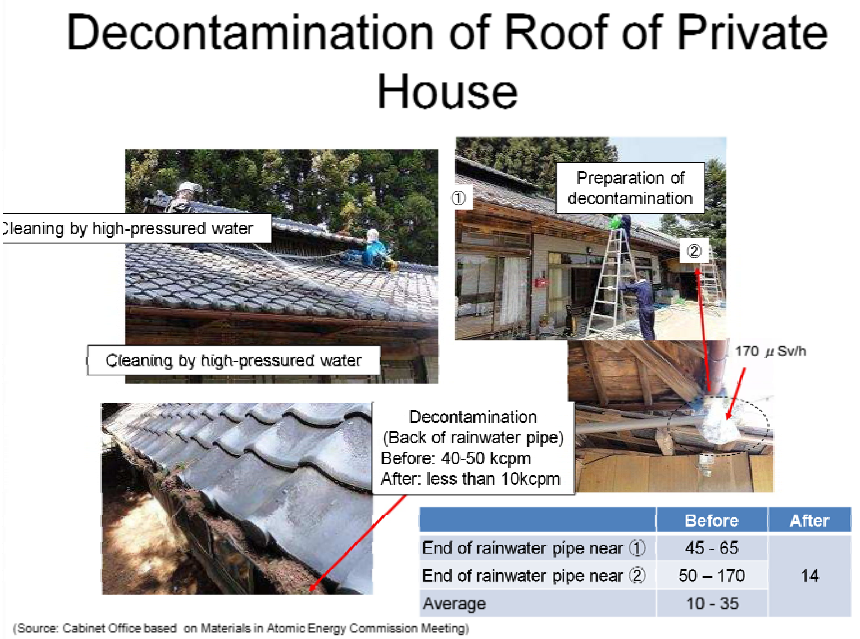
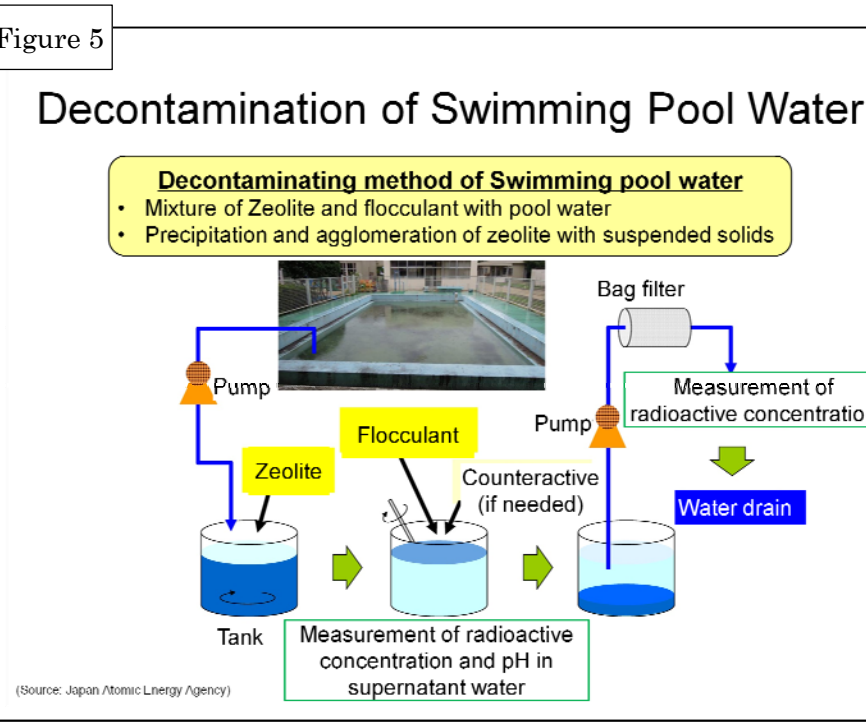



Figure 5




One of the biggest challenges for the Government and municipalities is to find places for temporary storage facility to store contaminated soil and waste collected by the decontamination activities, as well as for final disposal facility to store ash from incineration of such waste. The Government hopes that each municipality or community will find places for such facilities, promising that an interim storage facility that accepts them will become available in a few years. We recognize it also important to explore the feasibility of introducing volume reduction technology for contaminated soil before

Figure 6


or after storage, paying due attention to the social acceptability of reusing decontaminated soil recovered.

As the availability of the temporal storage space might limit the pace of decontamination activities, the Government is making utmost efforts to reach agreement with each municipality on the location for temporary storage of the waste and contaminated soil generated in the decontamination activities, in parallel with the determination of the site for an interim storage facility.

In conclusion, decontamination activities have started in residential area and school area in particular, asking experts for advice. As for high dose area that is restricted to inhabit, demonstration decontamination activities are being promoted and the Government and municipalities hope that large scale decontamination activities will be planned and executed based on the knowledge and experience obtained in these activities. We are recognizing it as a matter of utmost importance to agree upon the locations for temporal storage of the waste and contaminated soil to be generated in these activities with municipalities beforehand.

Finally I would like to express our deepest gratitude to you all for a wide array of support and suggestions. As we should intensify the decontamination of highly contaminated area from now on, your continued support will be most helpful.