

# **Mid-to-long Term Policy for Decontamination in the Power Station Site**

**October 22, 2012**

**Environmental Dose Reduction Team**



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# Current Dose Rates in the Power Station Site and Implementation of Decontamination

## < Current Status >

- The dose rates within the power station site vary in the range of a few  $\mu\text{Sv/h}$  to 1000  $\mu\text{Sv/h}$  and higher due to the impact of radioactive fallouts. (See the figure on the right)
- The high dose area around Units 1-4 (the area within the black dotted circle) is particularly affected by direct radiation as it is close to the Reactor Buildings. On the other hand, the area outside of the circled area is more affected by radioactive fallouts which land on the ground surface.

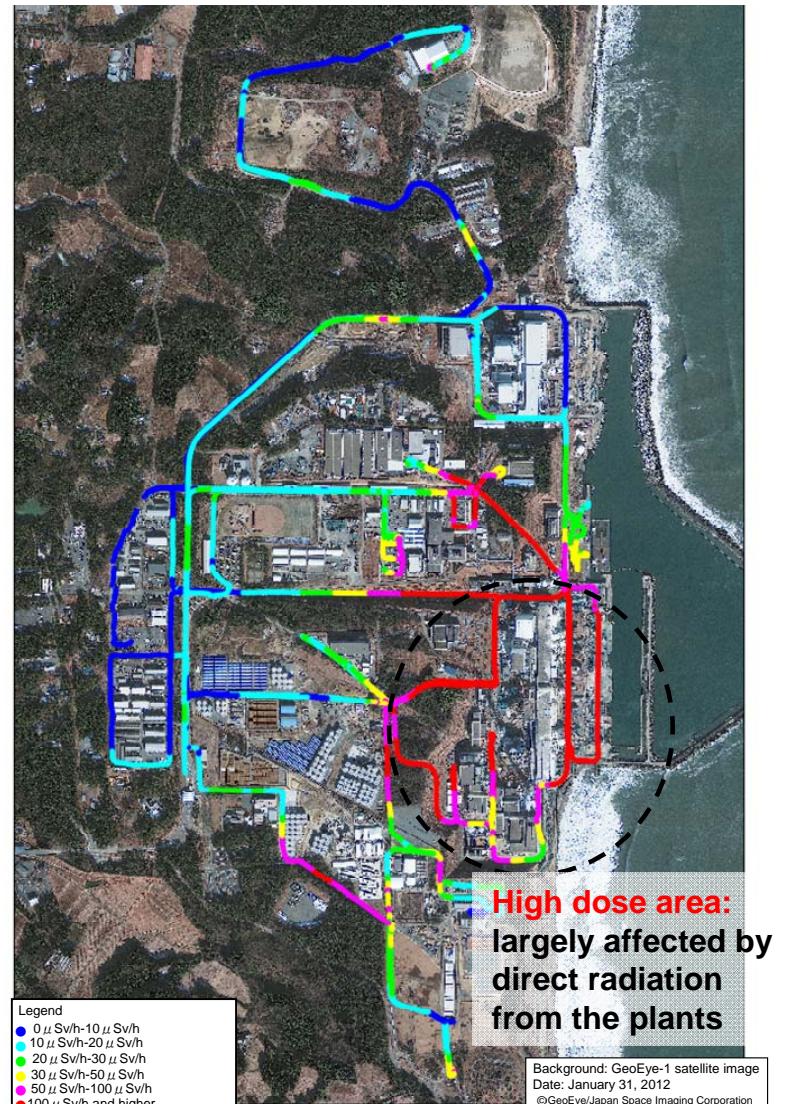
## < Decontamination measures >

- For the area within the power station site excluding the high dose area, the radioactive materials accumulated on the ground surface will be steadily removed (decontaminated) while reducing radiation exposure doses among workers [Dose reduction]. Furthermore, the area not requiring mask(breath protection tool) will be expanded while making sure that the radioactivity density of the air in the area is below the level requiring mask [Nonrequirement of mask].

\*Teams in charge of decontamination are as follows. Outdoor: environmental dose reduction team, office areas and rest areas: working environment improvement team, work area inside buildings: fuel debris removal preparation team. As for the high dose area around Units 1-4, necessary dose reduction measures such as shielding are being implemented.

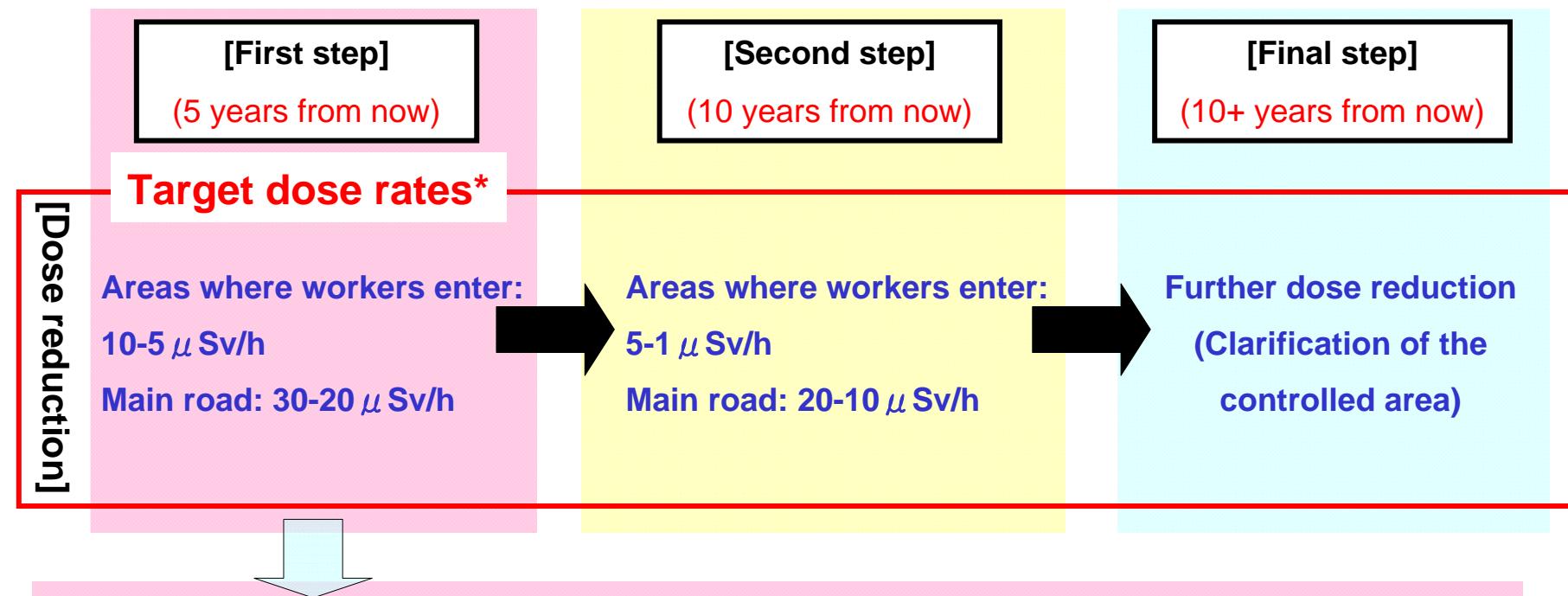
Air dose rates in the vehicle at a running survey

Measurement date: Wednesday, May 9, 2012



# Mid-to-long Term Goal of Dose Reduction

For the purpose of reducing doses in areas where many workers enter, the locations subject to decontamination are selected and target dose rates are set for each step. The target dose rates are gradually reduced for each step aiming for the levels before the accident.



- [Areas where workers enter for which dose reduction measures have been implemented (See page 4)]
- Around the Main Anti-earthquake Building (Implemented in January 2012)
  - Bus stop area in front of the Main Anti-earthquake Building (Implemented in September 2012)
  - Around the main gate and the Entrance Control Building (Currently being implemented)

\*The target dose rates for the main road and the areas where workers enter are set separately since workers only pass through the main road in a vehicle.

## Areas Subject to Dose Reduction

Areas subject to dose reduction selected for the purpose of reducing doses in areas where many workers enter and the current dose rates

6. Around the Incinerator Building (to be constructed):

Less than  $50 \mu\text{Sv/h}$

4. Around Units 5-6: Less than  $30 \mu\text{Sv/h}$

5. Main road (Shiomizaka, etc. Points A-L):

Less than  $220 \mu\text{Sv/h}$

1. Around the Main Anti-earthquake Building:

Less than  $180 \mu\text{Sv/h}$

2. Around the Welfare Building: Less than  $20 \mu\text{Sv/h}$

2. Around the Cooperative Company Building:

Less than  $20 \mu\text{Sv/h}$

6. Around the Entrance Control Building

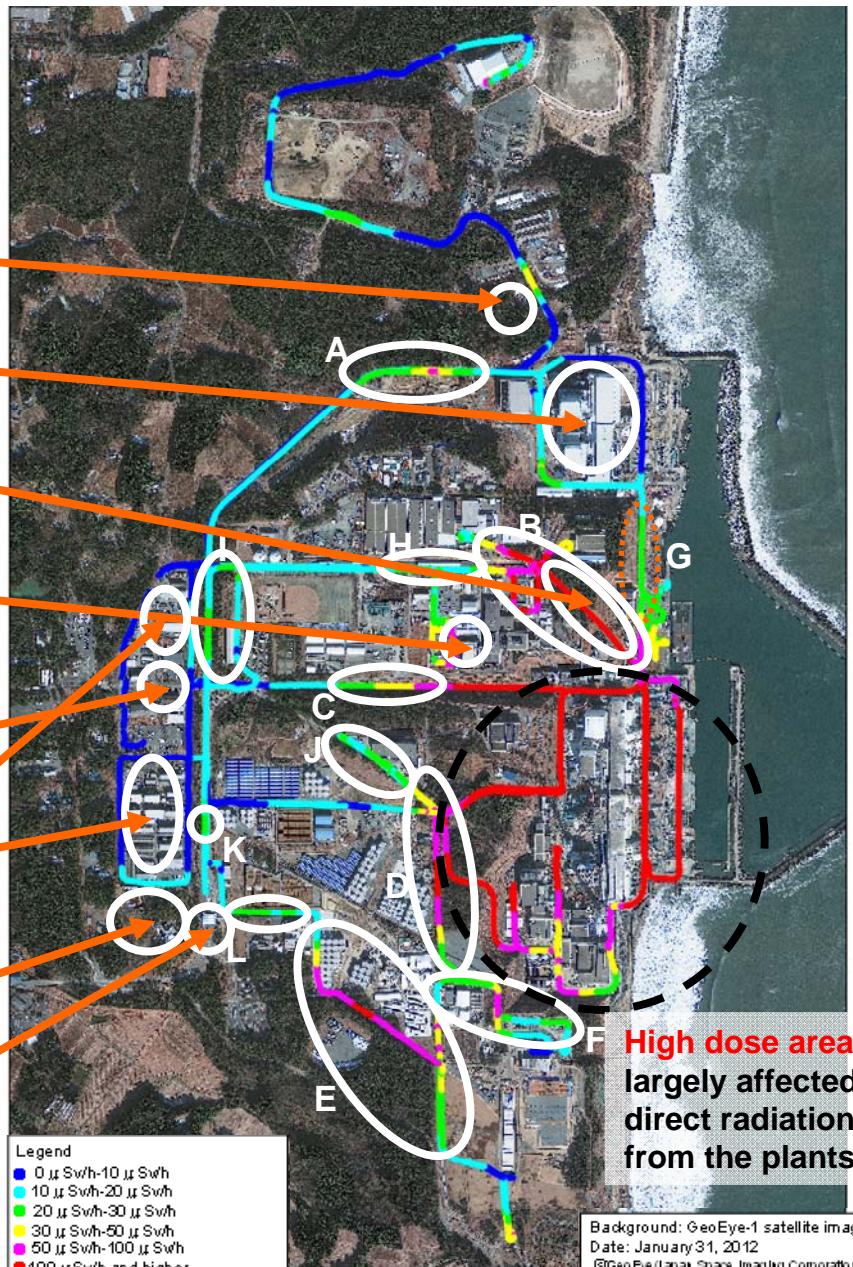
(under construction): Less than  $50 \mu\text{Sv/h}$

3. Around the main gate: Less than  $25 \mu\text{Sv/h}$

For the locations indicated by underlined red letters, dose reduction measures have been implemented in the past.

Air dose rates in the vehicle at a running survey

Measurement date: Wednesday, May 9, 2012



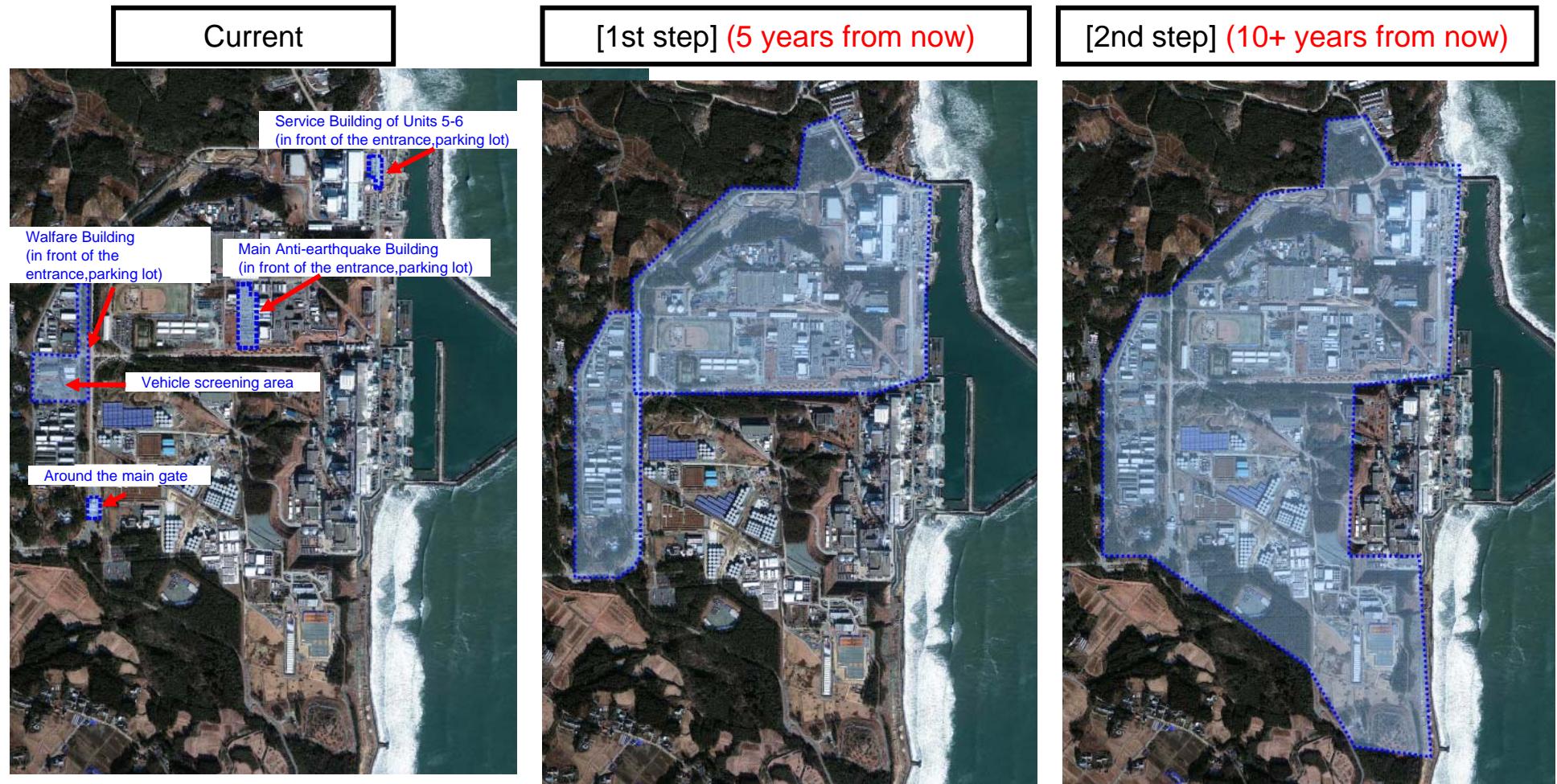
## Decontamination Plan for FY 2012-2014 (in the Power Station Site)

Through decontamination, the current dose rates will be gradually reduced to the target dose rates while making sure not to exceed the workers' exposure dose limit. The concrete decontamination plan (range of decontamination area, decontamination method, etc.) will be developed separately in consideration of the geography of the site and the radiation source.

	Area subject to dose reduction	Current dose rate	Target dose rate	Decontamination tools (Planned)	Implementation timing
1	Around the Main Anti-earthquake Building (in front of the entrance, parking lot)	Less than 180 $\mu$ Sv/h	10-5 $\mu$ Sv/h	Decontamination of asphalt by high pressure water, shielding by installing steel plates, etc.	FY2012-
2	Around the Welfare Building and the Cooperative Company Building (in front of the entrance, parking lot)	Less than 20 $\mu$ Sv/h	10-5 $\mu$ Sv/h	Decontamination of asphalt by high pressure water, trimming lawn and plants, pruning, etc.	FY2013-2014
3	Around the main gate (the area security officers stay in)	Less than 25 $\mu$ Sv/h	10-5 $\mu$ Sv/h	Decontamination of asphalt by high pressure water, trimming lawn and plants, pruning, etc.	FY2012
4	Around Units 5-6	Less than 30 $\mu$ Sv/h	10-5 $\mu$ Sv/h	Decontamination of asphalt by high pressure water, trimming lawn and plants, pruning, etc.	FY2014
5	Main road (Shiomizaka, etc. Points A-L)	Less than 220 $\mu$ Sv/h	30-20 $\mu$ Sv/h	Removal of highly radioactive sand accumulated on road shoulders, trimming lawn and plants, pruning, etc.	FY2013-
6	Entrance Control Building, Incinerator Building, etc.	Less than 50 $\mu$ Sv/h	10-5 $\mu$ Sv/h	Land leveling for construction of buildings, etc. (deep plowing, etc.), concrete construction, etc.	FY2012- FY2014

The decontamination plan for FY2015 and on will be developed in consideration of the site conditions.

# Mid-to-long Term Goal of Expanding Area Not Requiring Mask



As the radioactive material concentration in air is below the level requiring mask (Particle Cs:  $2 \times 10^{-4} \text{Bq/cm}^3$ ), the areas indicated in blue have been designated as area not requiring mask.

With the amount of radioactive materials flying into the air being reduced through decontamination, area not requiring mask will be expanded to other areas within the power station site excluding the high dose area around Units 1-4, tank installation areas and the forest.

Area not requiring mask will be further expanded according to the reduction in tank installation area, etc. as a result of making the reactor cooling loop smaller and installation of waste storage facilities (excluding the high dose area around Units 1-4 and the forest).