

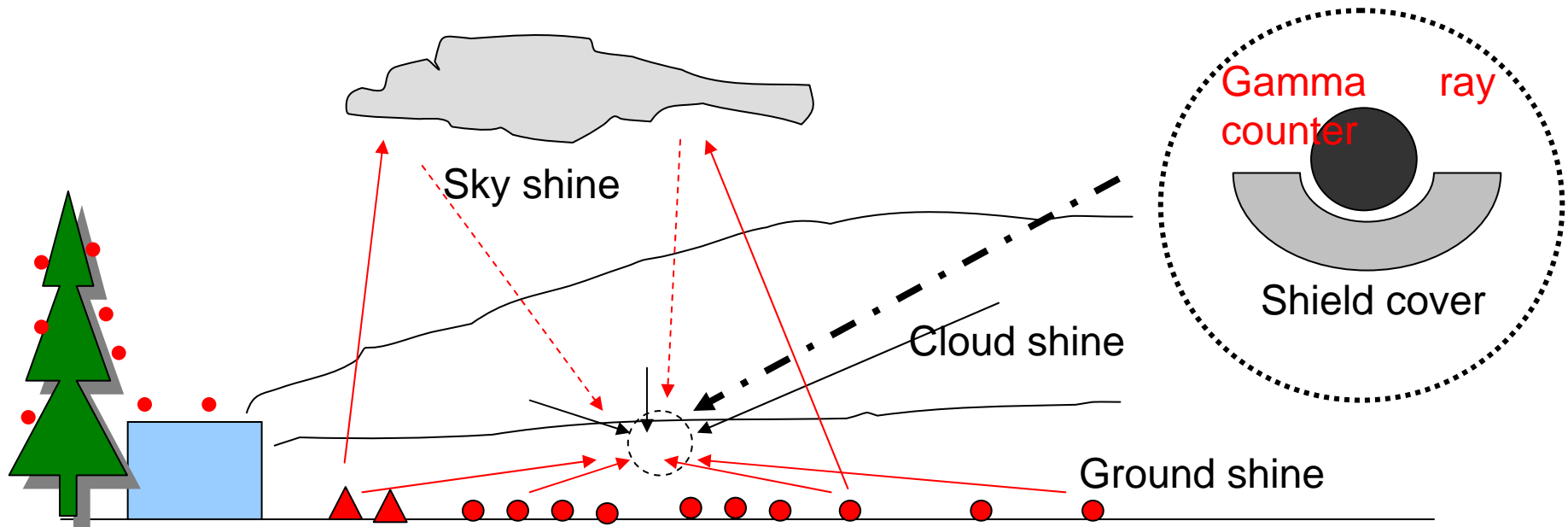
Report on a Recent Field Program to Collect Radiation Measurements Surrounding the Fukushima Nuclear Power Station

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- Funded by Ministry of Education and Science (MEXT)
- Contracted by Japan Science and Technology Agency (JST)
- Conducted by Nuclear Safety Research Association (NSRA)

Difficulties to use the observed data during nuclear accident

- Unsteady wind field
- Cloud shine +ground shine +Sky shine
- Wet & Dry depositions
- Multiple radioactive materials released
- Limited data observed



Observed data available from WEB sites (in English)

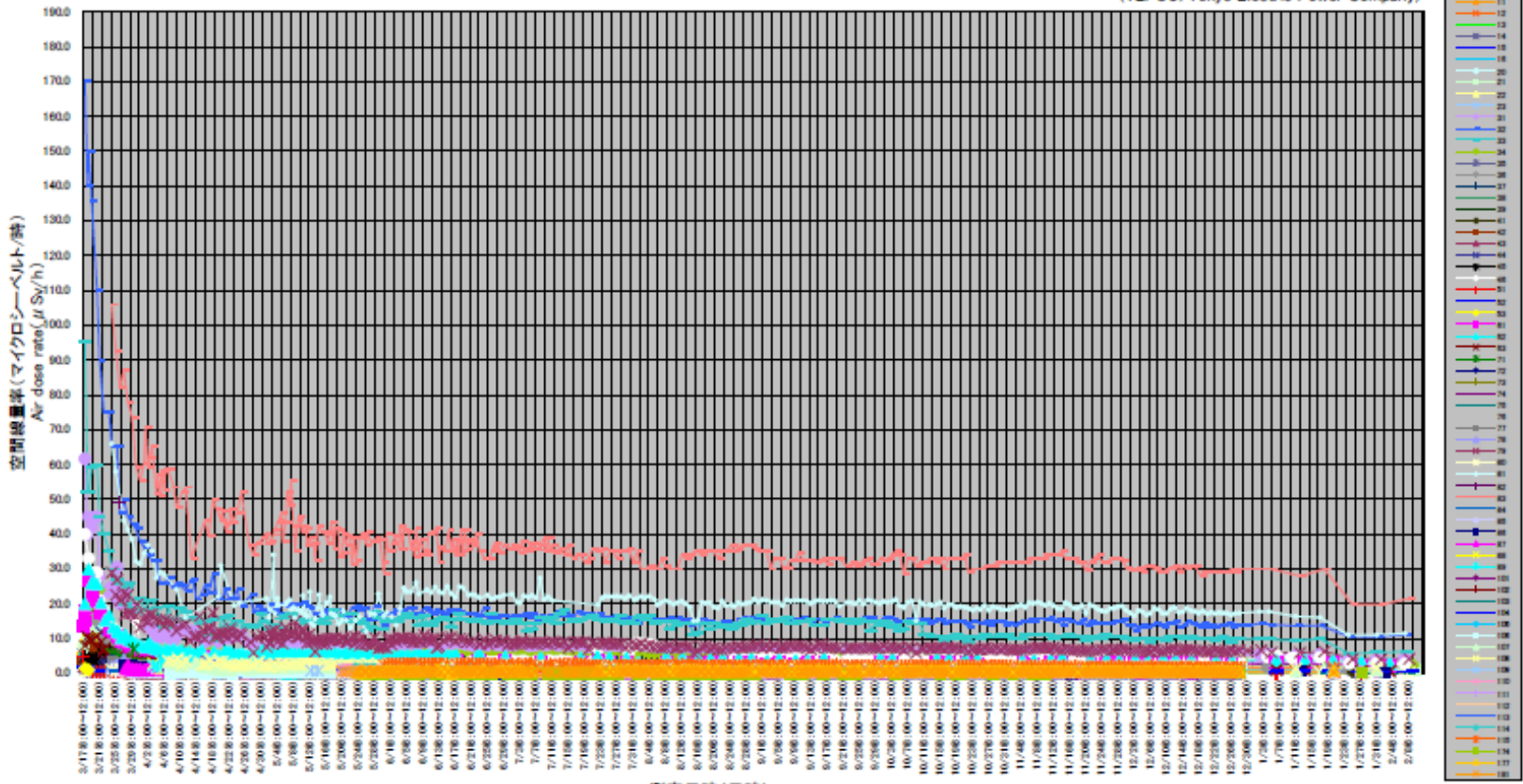
Data	Obs. period	Obs. points	Time lag	Notes
Monitoring Post out of 20 Km Zone	1 time/day	Few tens	1 day	Pdf file
Pu&U at Monitoring Post out of 20&30 Km Zone	1 time(22-23, March, 2011)	3 points	1 week	Pdf file
Radioactive strontium in land soil and plant	1 time(17-19, March,2011)	7 points	1 month	Pdf file
MEXT and DOE Airborne Monitoring	1 time/day	Few tens km square	1 day	Pdf file
Air dose rate in Fukushima Prefecture (Fukushima City) (Each Pref. in Japanese)	Every 30 min.	1 points	On line	Pdf file (Excel file in Japanese)
Monitoring post at each nuclear power stations	Every hour	Few points	On line	Trend graph (in Japanese)

<http://radioactivity.mext.go.jp/en/>

Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP

東京電力株式会社福島第一原子力発電所の20km以遠のモニタリング結果の推移(3/17~2/9)
 (Readings at Reading Points out of 20 km Zone of TEPCO Fukushima Dai-ichi NPP March 17-February 9)

(TEPCO: Tokyo Electric Power Company)



注:測定データが区分された8時間内に複数ある場合は、最大値をプロットしている。
 Note: The maximum data is plotted if there are more than one data in 8 hours.

注1:文部科学省、日本原子力研究開発機構、原子力安全技術センター及び警察(10月24日以前)による測定結果を基盤
 Note 1: Data from METI, Japan Atomic Energy Agency, NUCLEAR Safety Technology and Police (after March 24)
 注2: Values for 2, 13, 15, 20, 30, 37, 100, 107, 108, 110, 121 are estimated values.
 Note 2: Values for 2, 13, 15, 20, 30, 37, 100, 107, 108 and 110 after January are estimated values.

Pu&U at Monitoring Post out of 20&30 Km Zone of Fukushima Dai-ichi NPP

Sampling Point	Sampling Date and Time	radiation dose rate [μ Sv/h]	Pu-238	Pu-239+240	U-235/U-238
Around Kodeya in Kuzuo Village	3/23 About 10:20	43.5	Not Detectable (Below 0.1 Bq/kg)	Not Detectable (Below 0.1 Bq/kg)	0.00731
East Side of Hirusone Tunnel ,Namie Town	3/23 About 10:40	46.5	Not Detectable (Below 0.1 Bq/kg)	Not Detectable (Below 0.1 Bq/kg)	0.00726
Akougi Namie Town	3/22 About 11:30	50.1	Not Detectable (Below 0.1 Bq/kg)	Not Detectable (Below 0.1 Bq/kg)	0.00723

* Isotope abundance ratio of U-235/U-238 in a state of nature : 0.00725

Radioactive strontium in land soil and plant of Fukushima Dai-ichi NPP

Sample	Sampling Point (Number or Name)	Sampling Date	^{131}I	^{134}Cs	^{137}Cs	^{89}Sr	^{90}Sr	Unit
Land Soil	31* ²	3/17	30,000	2,300	2,300	13	3.3	Bq/kg WetSoil
Land Soil	32* ²	3/16	100,000	20,000	19,000	81	9.4	Bq/kg WetSoil
Land Soil	33* ³	3/16	160,000	52,000	51,000	260	32	Bq/kg WetSoil
Plant	Ootama Village	3/19	43,000	89,000	90,000	61	5.9	Bq/kg raw
Plant	Motomiya City	3/19	21,000	57,000	57,000	28	3.7	Bq/kg raw
Plant	Ono Town	3/19	22,000	12,000	12,000	12	1.8	Bq/kg raw
Plant	Nishigou Village	3/19	12,000	25,000	25,000	15	3.8	Bq/kg raw

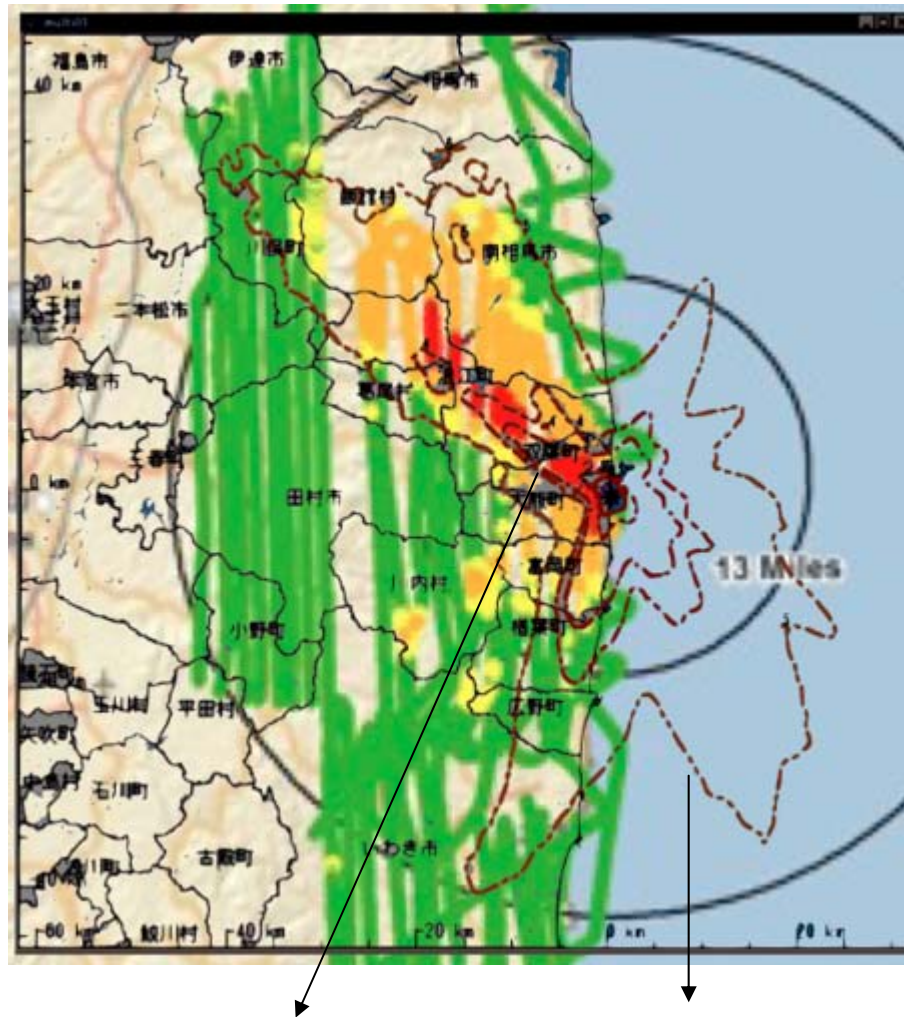
* 1 Plants are provided by Fukushima Pref.

* 2 Namie Town

* 3 Iitate Village

Only seven above-mentioned points were sampled, and measured.

MEXT and DOE Airborne Monitoring

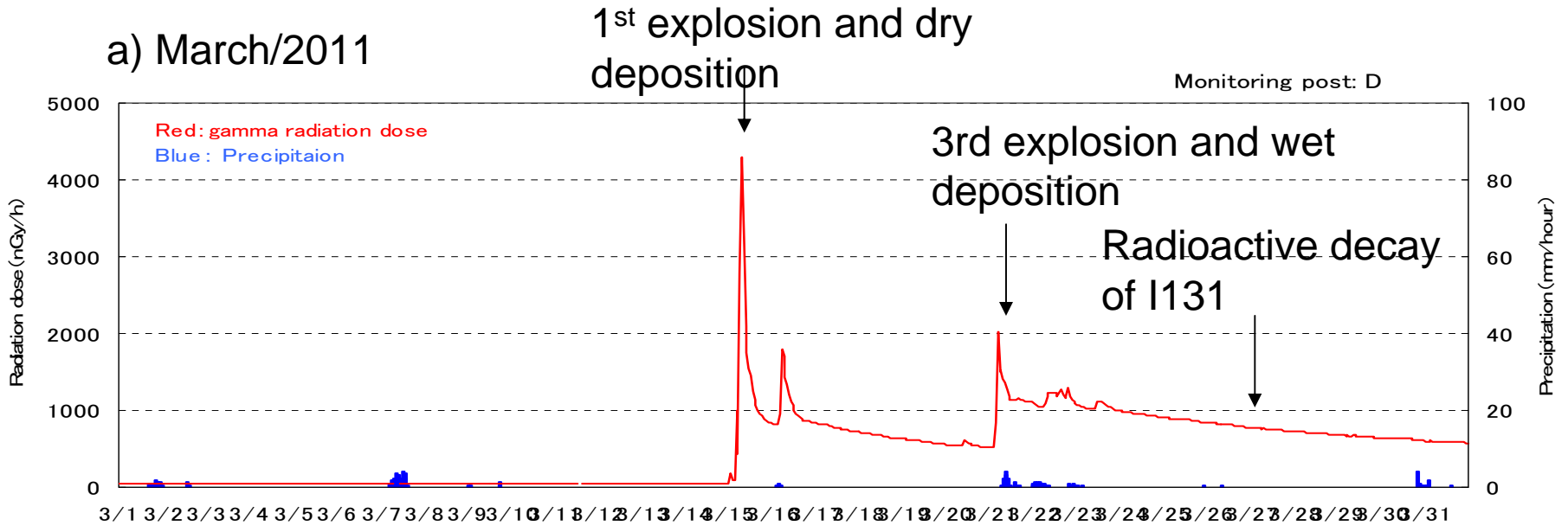


Airplane measuring data by US/DOE (color) and calculated results by Japan/SPEEDI (contour)
(airplane data: converted from measured radiation data at high level to surface, green color is flight route)

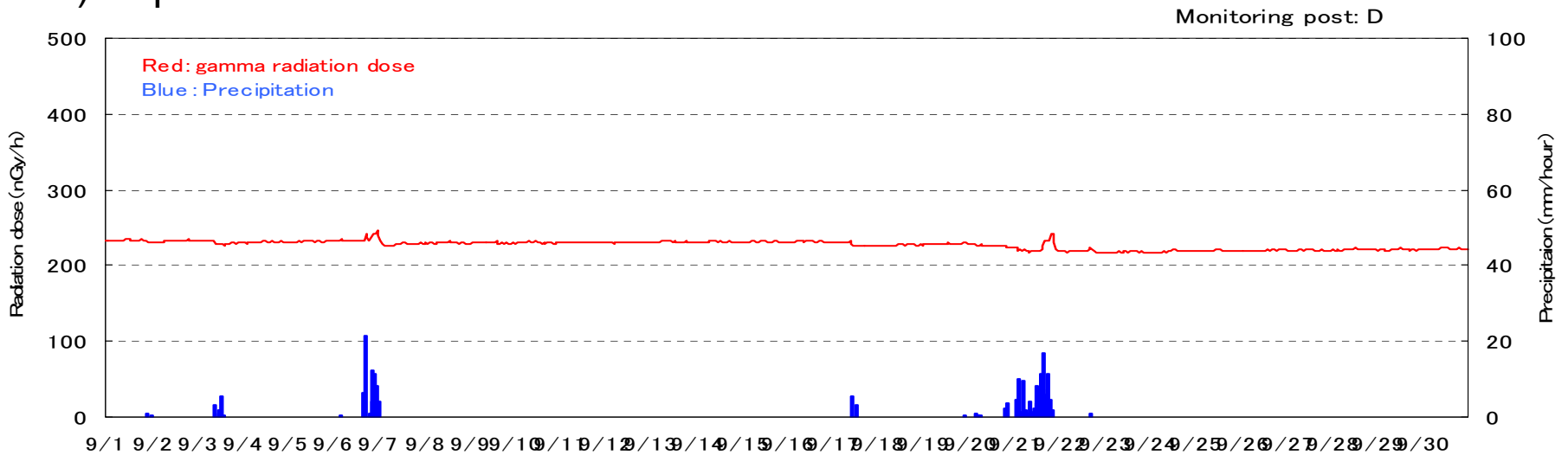
(source intensity of SPEEDI is estimated from dust sampling data near the power station)

Time history of monitoring data in Tokai NPP

a) March/2011



b) September/2011



Daily News report from GRS in Germany

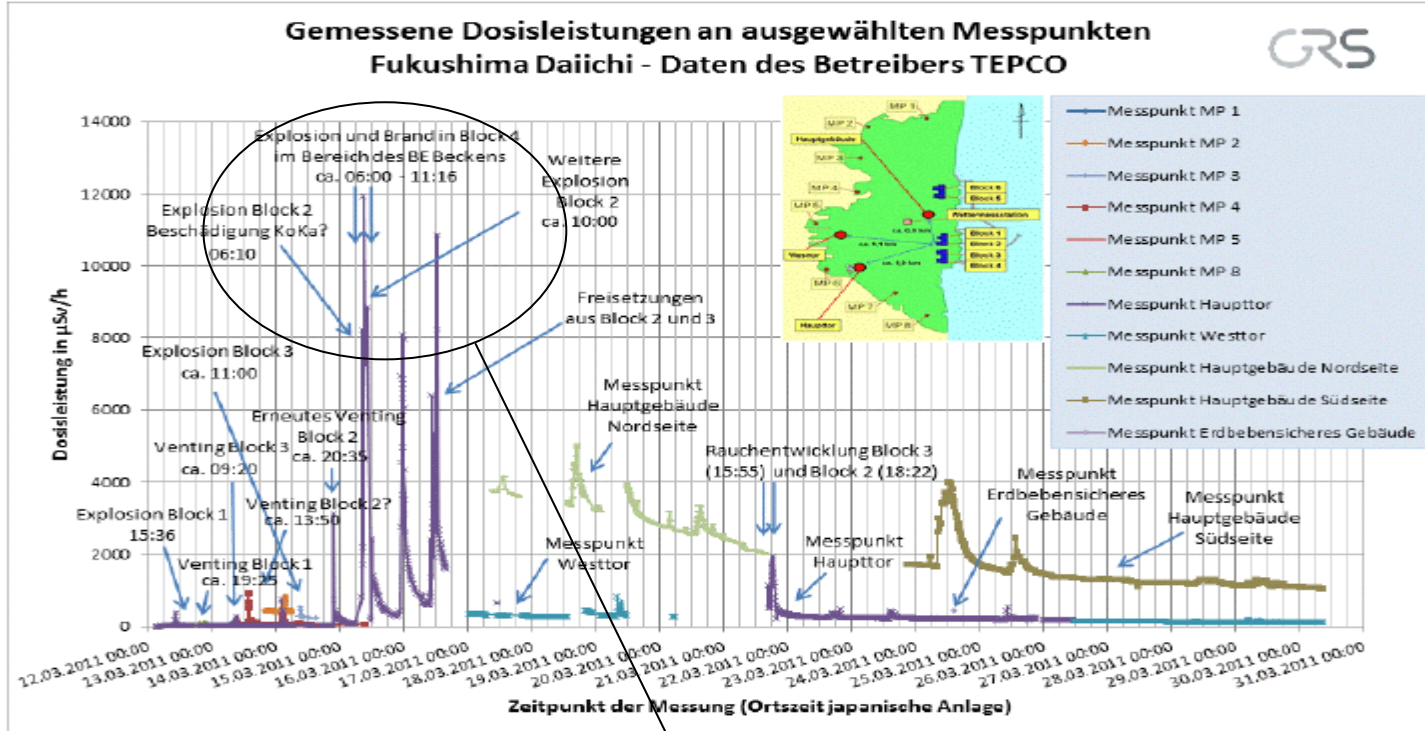
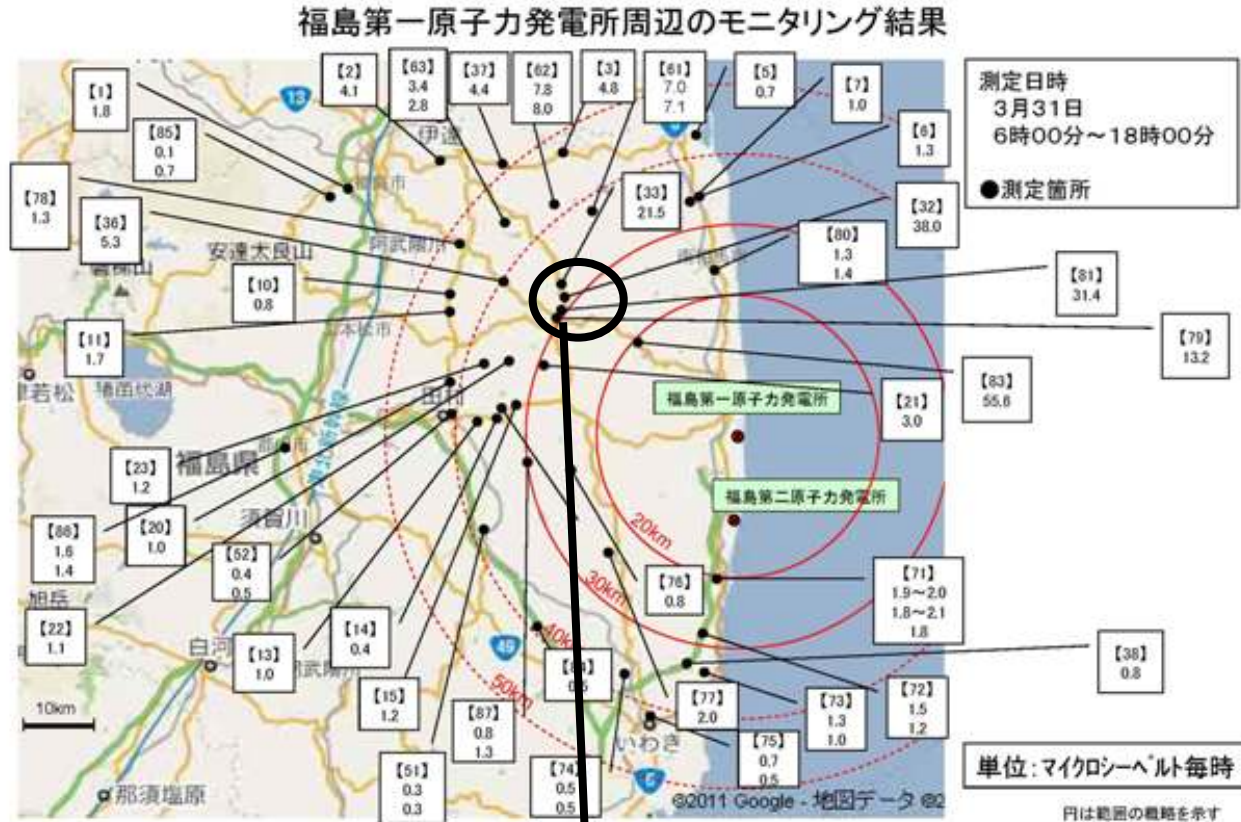


Figure 1 (all times local time)

Dose rates measured in selected measuring locations (MP) at Fukushima Daiichi – Data provided by the operator TEPCO

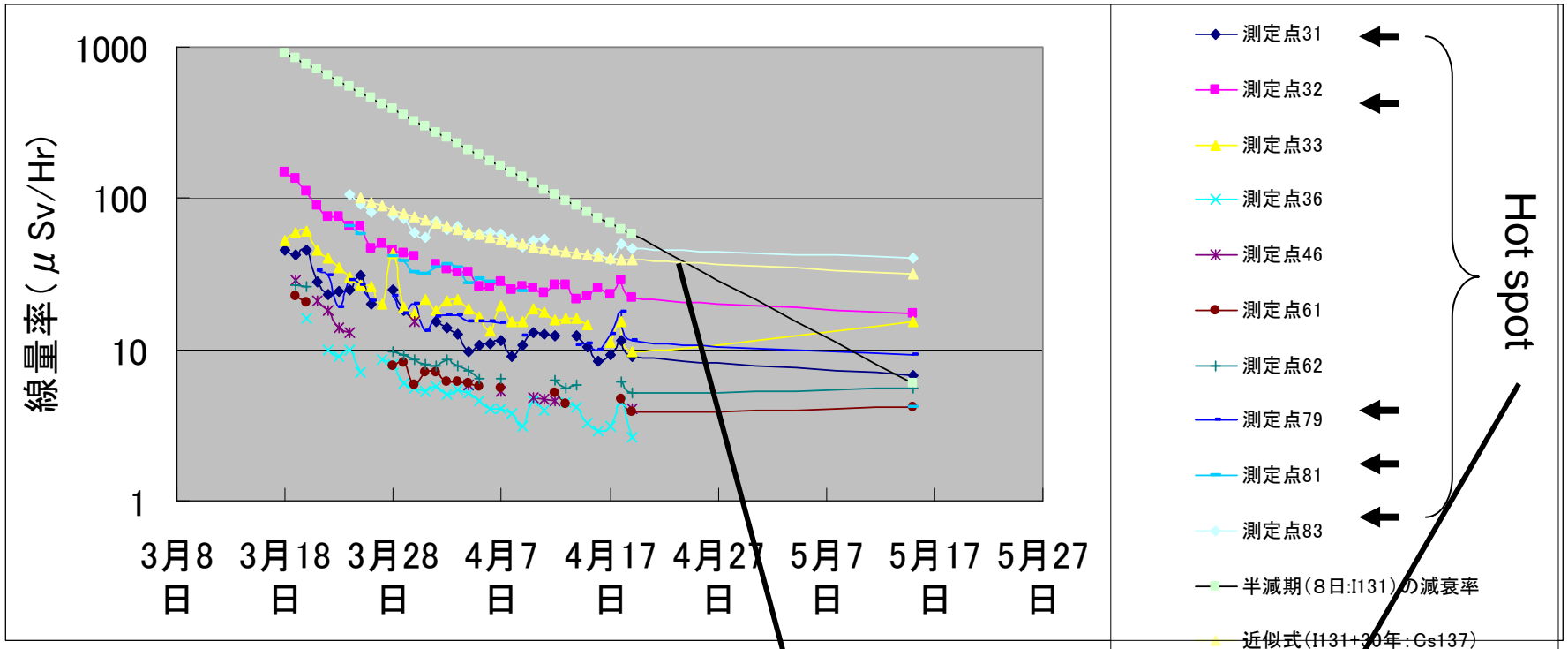
Time history of radiation dose indicates the explosive event at 15,16,17th)

Information on Fukushima Accident(3)



Measured data of radiation dose by car
(hot spot is observed beyond 30km)

Information on Fukushima Accident(4)



Measured data of radiation dose near ground surface

- Change from effect of I131 to Cs137
- radiation dose is influence mainly by deposition material, not cloud
- Additional evacuation zone beyond 30km, more than 100mSv/year ($11 \mu \text{ Sv/hr}$)