May 6, 2011

Results of Airborne Monitoring by the Ministry of Education, Culture, Sports, Science and Technology and the U.S. Department of Energy

The results of the Airborne Monitoring by the Ministry of Education, Culture, Sports, Science and Technology and the U.S. Department of Energy (announced April 5, 2011) were summarized today, so they are provided here.

1. Goals of Performing this Monitoring

In order to understand the effects over a wide area due to radioactive substances, and for the assessment of doses and of the deposition of radioactive substances for future evacuation zones, etc., the Ministry of Education, Culture, Sports, Science and Technology and the U.S. Department of Energy (hereinafter, "U.S. DOE") are jointly performing airborne monitoring,* and checking the air dose rate 1m above the ground surface within 80km from Fukushima Dai-ichi NPP, and the deposition of radioactive substances in the ground surface.

* Airborne monitoring is a technique in which highly sensitive, large radiation detectors are installed in aircraft, and gamma rays from radioactive substances accumulated in the ground are quickly measured over a large area, in order to check the surface deposition.

2. Details of this Monitoring

● Measurement dates: April 6 to 29

● Aircraft: 1 Ministry of Education, Culture, Sports, Science and Technology (Nuclear Safety Technology Center)

• Private helicopter (BELL 412)

2 U.S. DOE

- Small aircraft (C-12)
- Helicopter (UH-1)

● Items covered: Air dose rate 1m above the ground surface within an 80km range of Fukushima Dai-ichi NPP, and deposition of radioactive substances in the ground surface (cesium 134, cesium 137)

*Aircraft monitoring performed by U.S. DOE within 60km from the Fukushima Dai-ichi NPP, and by Ministry of Education, Culture, Sports, Science and Technology from 60km to 80km away.

3. Results of this Monitoring

Attachments 1 to 4 have the "Dose Measurement Map" which shows the air dose rate 1m from the ground surface, and the "Soil Concentration Map" which shows the deposition of radioactive substances in the soil surface, both prepared through this monitoring.

The maps were prepared based on the following conditions.

● Created based on results of airborne monitoring by the Ministry of Education, Culture, Sports, Science and Technology and the U.S. DOE.

● This published data was prepared based on results obtained from April 6 to 29 by a small airplane and two helicopters, in a total 42 flights. Their flight altitudes were from 150 to 700m above ground.

● The air dose rate at the ground surface is the averaged value of air dose rates in a roughly 300m to 1500m diameter circle (varies by flight altitude) below the aircraft.

● The eastern part of Inawashiro Town is a mountainous area, making low altitude flights difficult, so there are no measurement results there. (In this area, per Attachment 5, as a result of measurements by the Monitoring Car of the Nuclear Safety Technology Center, it was confirmed to be one microsievert or less per hour.)

● Airborne monitoring just above the Fukushima Dai-ichi NPP has to be consist of the measurement of the air dose rate directly from the power plant, so such monitoring has not been done.

● For the air dose rate and deposition of radioactive substances in the ground surface, decay of radioactive substances was considered and actual readings were converted into values as of April 29, when this monitoring was last done.

● The deposition of cesium 134 in the ground was calculated based on the results of airborne monitoring and of measurements which the U.S. DOE took on the ground using a gamma ray energy analysis device.

● Based on the results of U.S. DOE measurements of cesium 134 on the ground using a gamma

ray energy analysis device, and analysis values of cesium 137, the deposition of cesium 137 in the ground was calculated from results of accumulated cesium 134.

- The measured area range is 80km, to check the spread status of radioactive substances.

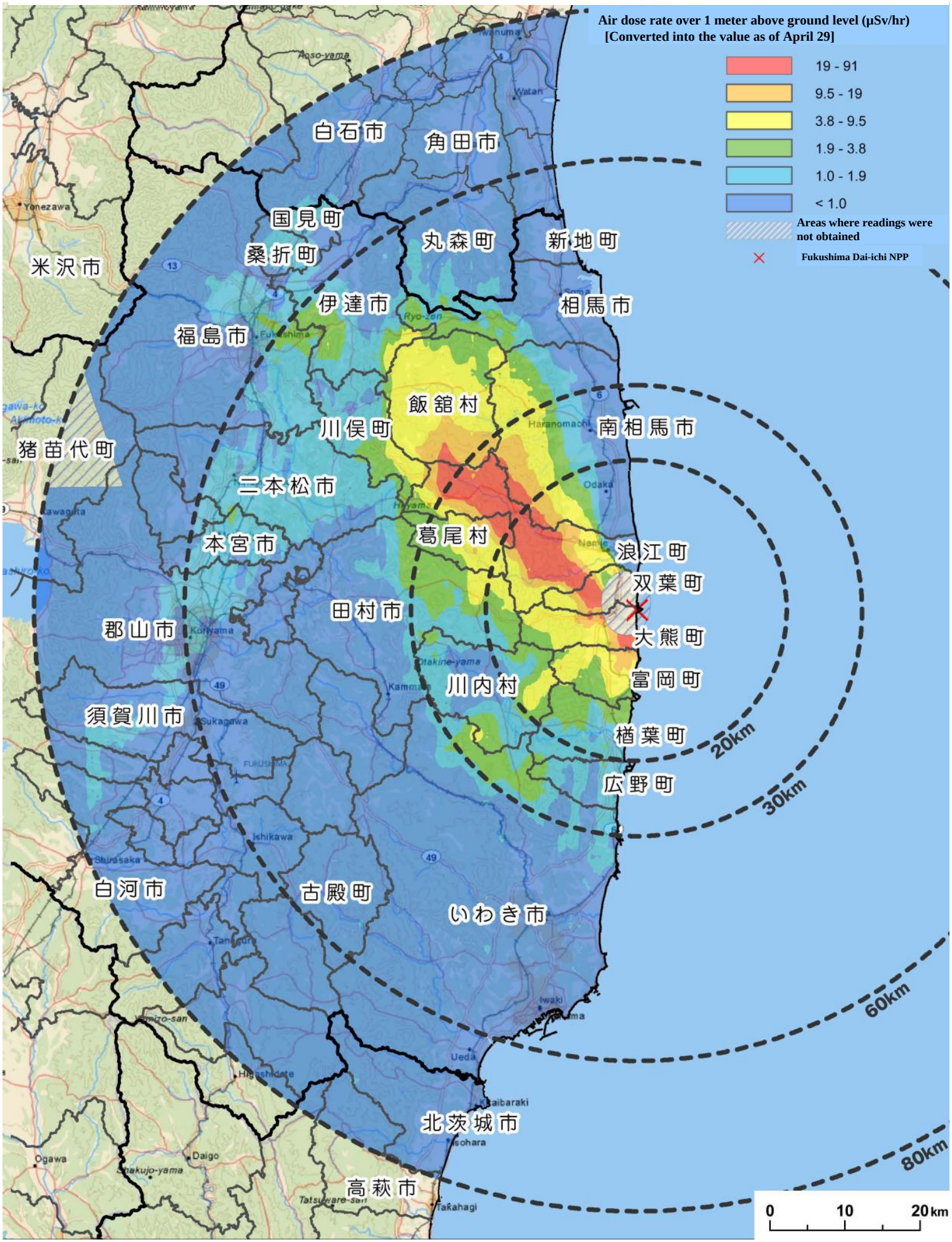
4. Future Plans

Based on study on these results, future flight areas will be decided, and continued aircraft monitoring performed.

Annex 1

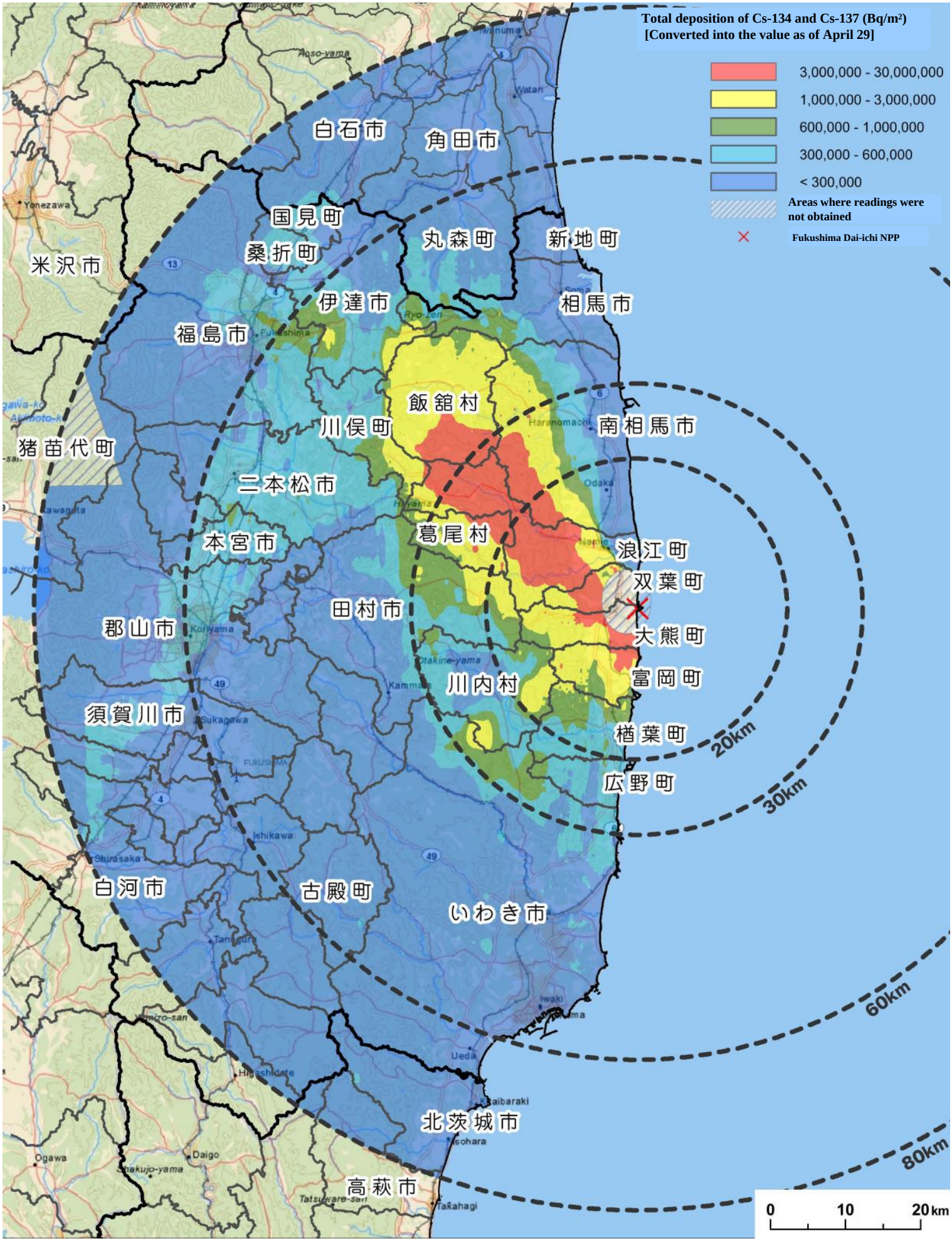
Results of airborne monitoring by MEXT and DOE

（Readings of air dose monitoring inside 80km zone of Fukushima Dai-ichi NPP)



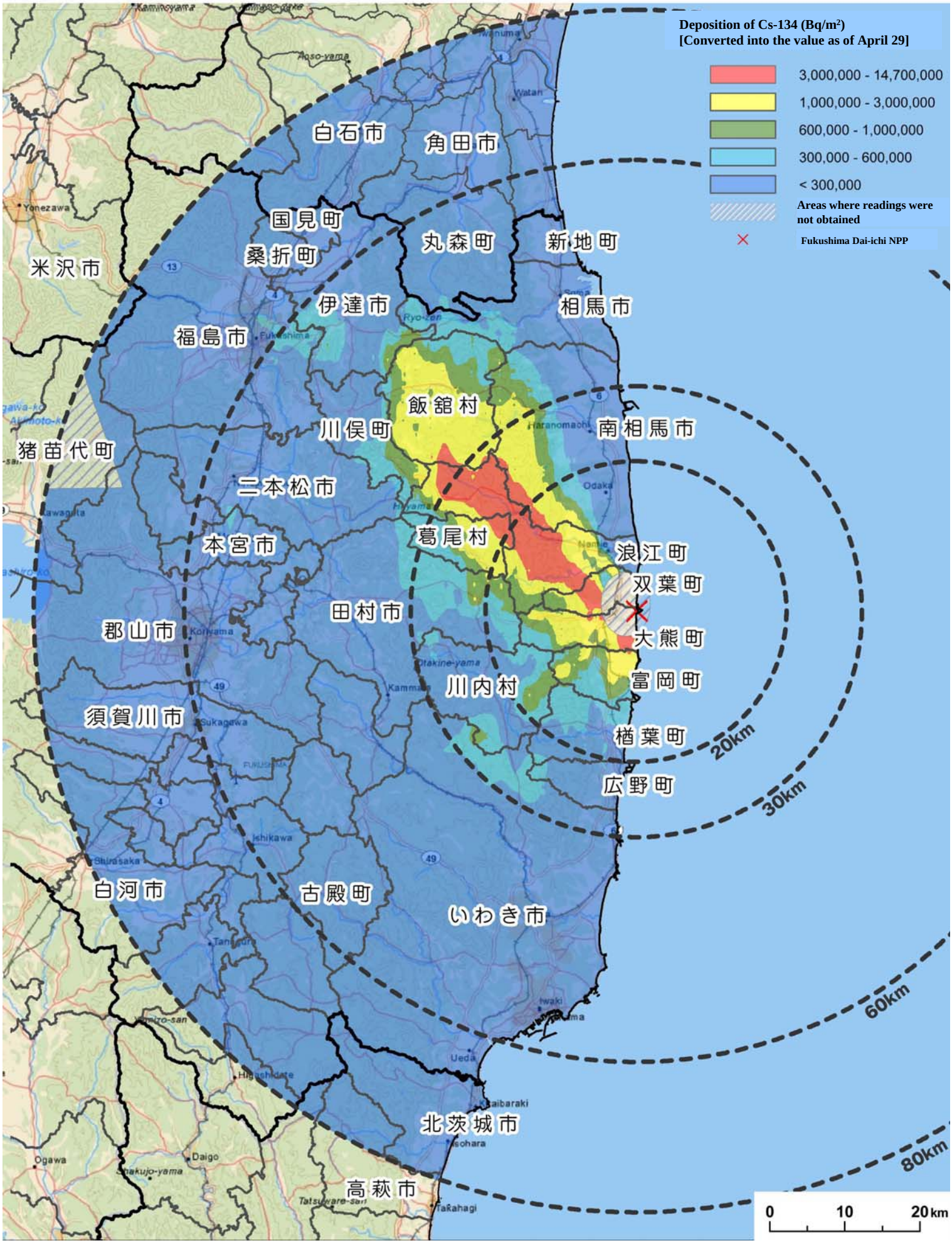
Annex 2

Results of airborne monitoring by MEXT and DOE
(Total surface deposition of Cs-134 and Cs-137 inside 80 km zone of Fukushima Dai-ichi NPP)



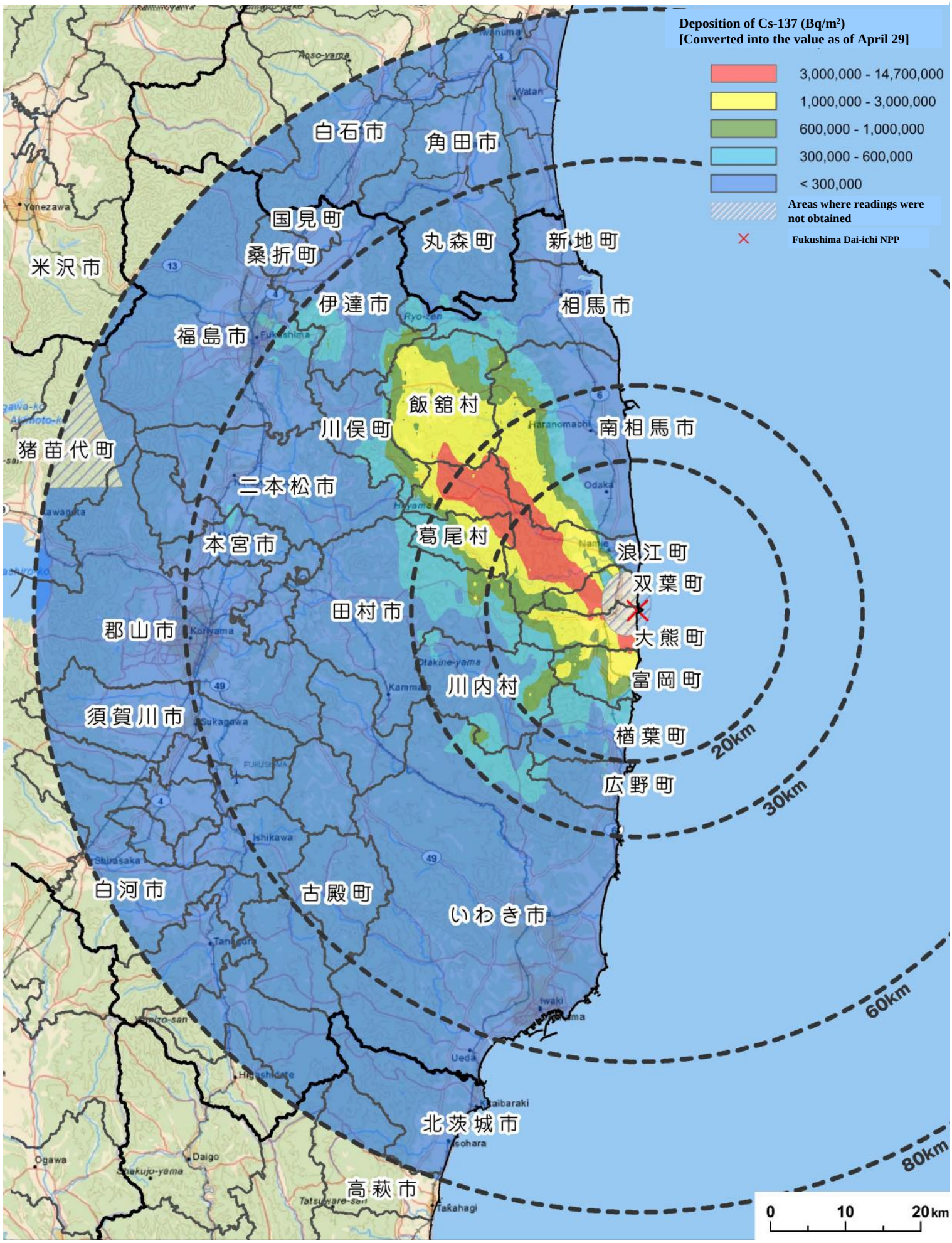
Annex 3

Results of airborne monitoring by MEXT and DOE
(Surface deposition of Cs-134 inside 80 km zone of Fukushima Dai-ichi NPP)



Annex4

Results of airborne monitoring by MEXT and DOE
(Surface deposition of Cs-137 inside 80 km zone of Fukushima Dai-ichi NPP)



Annex5

Readings of air dose rates on land
(Areas where airborne monitoring could not be conducted)

Monitoring time：April 24, 2011

*Measured by monitoring vehicle of the Nuclear Safety Technology Center