

Accident in the Japanese NPP Fukushima: Spread of Radioactivity

(Update: March 17, 2011 9:00)

Weather in the crisis region

Currently, westerly upper-level winds predominate in the crisis region. Surface winds are relatively weak, and there are no reports of precipitation. Wind will soon turn to southwesterly directions and increase significantly. On Sunday, a frontal system is crossing the region, with heavy rain. Behind the front, northerly winds are predicted, increasing the risk for the Region around Tokyo.

Dispersion modelling

Dispersion model results currently show that the plume spreads towards the ocean. Currently, the plume expands towards the south-east, tomorrow towards the north-east (see images). Later on (Sunday/Monday), areas of Japan are influenced again (see image below).

Regarding the colour scaling of the simulation, one needs to keep in mind that the red colour marks areas around the plant where the effective dose rates were, at the absolute maximum, 100 Milli-Sievert per hour (according to information released by IAEA in Vienna). The violet colour thus shows areas with estimated effective dose rates of 100 Nano-Sievert (maximum) per hour. Summed up over a period of one year, this would still be less than the natural radiation exposure of an average citizen.

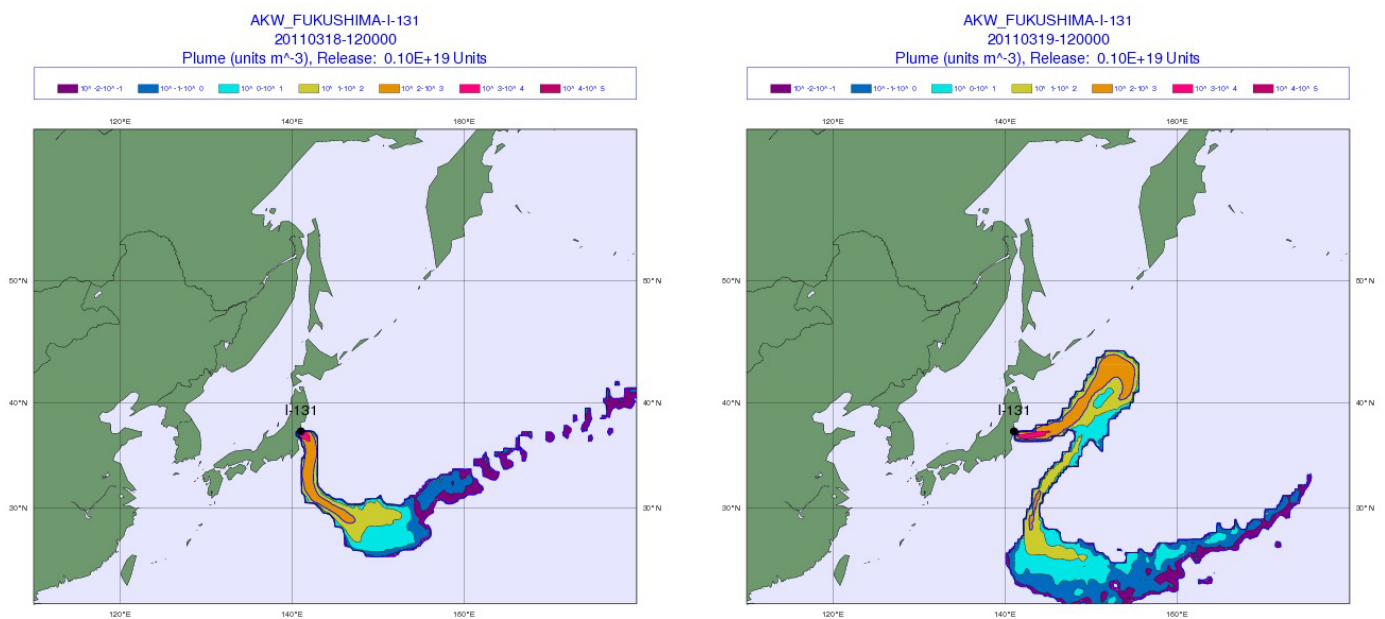


Figure: Plume spread over Eastern Asia today and tomorrow 12:00 UTC

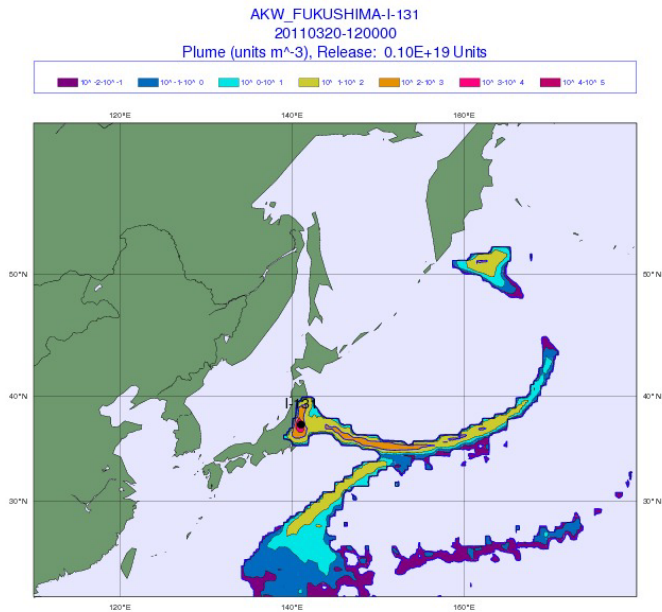


Figure: Plume spread over Eastern Asia for Sunday 12:00 UTC

Radiation data/CTBTO

The CTBTO station in Takasaki/Gunma in Japan had a failure due to electric power problems on March 14. On March 15, there was a not reviewed radionuclide report issued, which indicates the detection of several radionuclides, among those Iodine-131 and Barium-140, with the activity concentration of Iodine-131 being 15 Bq m⁻³. In addition to that, it appears that radioactivity from Japan meanwhile reached the station Petropavlovsk in Russia (location see image below). Here, several radionuclides are indicated in a not reviewed report on 15 March. The concentrations of Iodine-131 was below the one detected in Takasaki by four orders of magnitude.

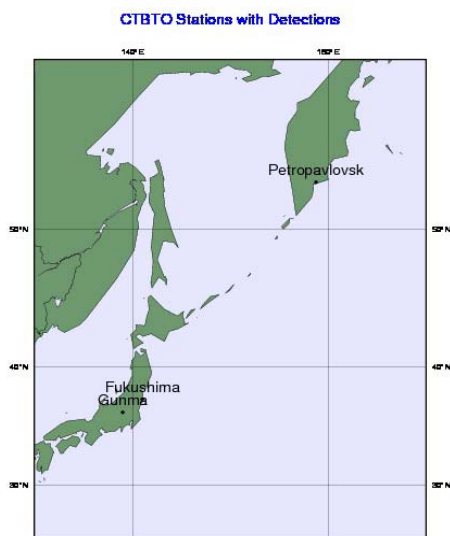


Figure: CTBTO stations seeing radionuclides from the accident so far

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ZAMG will not answer any questions related to travel in Japan or in other parts of the world, since this is the responsibility of national radiation protection authorities. Travel advisories and warnings are available from your foreign ministry. In Austria, such advisories are available on www.bmeia.gv.at.

This information is updated daily, and whenever the development of the situation requires it.

Videos:

Plume spread from Fukushima/Permanent Release/Iodine-131

Plume spread from Fukushima/Permanent Release/Cesium-137 (global image)