Information on Radiation Safety in Japan

April 15, 2011

Several colleagues outside Japan asked us about the current situation of the accident at Fukushima Daiichi nuclear plants and its effects on the safety and health of residents of Japan and overseas visitors. We thought that it would be best to provide you with some facts in Japan so that you, as scientists, can make your own judgment.

A. Detectable fall out of radioactivity is now limited to the area near the reactors.

http://r.diim.jp/

This set of graphs shows regional difference in the current environmental radioactivity (white circles) compared to the past levels (green circles. Movements represent variation).

Information of radioactivity in Japan provides the most comprehensive collection of information (Google translation available)

http://atmc.jp/

Note:

1. Radiation at ~0.10 μSv/h is considered to be the normal ambient level (Tokyo and surrounding areas are currently at this level).
2. Environmental radiation varies from place to place. For example, it generally increases with altitude. Denver Colorado (USA) has a radiation level above 1μSv/h. Much larger amount of nuclear fallout from atomic bomb experiments has been recorded during 1960th.
3. Graph based on data reported by Ministry of Education, Culture, Sports, Science and Technology (MEXT). http://www.mext.go.jp/english/radioactivity_level/detail/1304082.htm

B. The radiation level is constantly dropping.

Live monitor at KEK provides current level in Tsukuba.
http://rcwww.kek.jp/norm/index-e.html

Graph 1 "Radiation level in Kanto/Tokyo area] Till Apr-10, 9am. pm." http://plixi.com/p/92065300

Note:

1. A major release of airborne radioactivity occurred in March 15-16. Another increase on March 21 is now considered to be due to rain. No more increase was recorded upon rainfall on April 9-10, suggesting that most of airborne radioactivity was cleared or has been decayed.

2. 'Short bursts' could only be detected in the vicinity of the reactor (plots of Dai-ichi (1) monitors: http://dl.dropbox.com/u/16653989/NuclPlants/can.gif), but not at distant monitoring sites.

3. A graph based on the data provided by MEXT Japan, prepared by nuclear theory group of Professor Ryugo Hayano (Univ. Tokyo). He regularly tweets update and useful information (@hayano).

C. Life in Japan is returning to normal.

Water supply and foods in the market are controlled for radioactivity, and have been tested for safety (radiation level in water can be found here http://atmc.jp/water/). Although the Tokyo and Tohoku areas are still experiencing frequent aftershocks, public transportation in Tokyo is running near normally and scheduled blackouts have been terminated. In contrast, most of the other areas in Japan, such as Western areas, including Nagoya, Kyoto, and Osaka, are completely fine. Narita and Haneda international airports are under normal operation. Even for the most cautious visitors, exposure in these areas (0.083μSv/h in Tokyo, 4/10/2011) is significantly lower than what one receives during a flight. Furthermore you can choose other international airports in Western Japan, such as Kansai, Nagoya, and others.

On April 14, US Government has announced that health and safety risks to areas beyond the 50-mile evacuation zone from the Fukushima Daiichi plant do not pose significant risks to U.S. citizens. http://japan.usembassy.gov/e/acs/tacs-alert20110415.html

D. Condition of Fukushima Daiichi nuclear power plant.

It is still in serious condition and on April 12, Nuclear and Industrial Safety Agency (NISA) of Japan submitted a provisional International Nuclear and Radiological Event Scale (INES) Level 7 rating. Please note that this new rating is based on the record of the past one-month. No additional incidence was considered for this rating. Please look at the link to the IAEA homepage for latest update.

In sum, the effect of radioactive leakage from Fukushima Daiichi nuclear plants is limited to relatively small area, and radioactivity levels in Tokyo area are in the normal range. Radiation levels, seismicity, transportation, power supplies, and the availability of daily living needs in other parts of Japan are essentially unaffected.

We appreciate your enthusiastic support and hope to see you in Japan, soon.

Useful Link

Radiation Map of Japan http://r.diim.jp/

Information of radioactivity in Japan. Most comprehensive collection of information (Google translation available) http://atmc.jp/

Live Monitor of radioactivity (http://rcwww.kek.jp/norm/index-e.html) at KEK/ HIGH ENERGY ACCELERATOR RESEARCH ORGANIZATION at Tsukuba (http://maps.google.co.jp/maps/ms?brcurrent=3,0x602004816ddcd52f:0x341fa6c1d0d6465c,0&ie=UTF8&msa=0&msid=206497725761111174656.0004a018e450b3c555064&ll=37.186579,140.701904&spn=4.366793,8.074951&z=7).

IAEA Fukushima Nuclear Accident Update Log
http://www.iaea.org/newscenter/news/tsunamiupdate01.html

NARITA international airport (http://www.narita-airport.jp/en/index.html)

FAQ WHO (http://www.wpro.who.int/media_centre/jpn_earthquake/FAQs/): it provides useful information on food and radiation safety for travelers in Japan.

Location of Fukushima Daiichi plant and Okinawa (Google Map): http://112.78.197.77/okinawaloc.html