National Park Service
U.S. Department of the Interior

Office of Public Health

1201 Eye St, NW
11th Floor
Washington, DC 20005

http://www.nps.gov/public_health/index.htm

Office of Public Health Japan Earthquake

Director
202-513-7217

Chief
Epidemiology and Health Promotion Branch
505-248-7806

Chief
Field Services Branch
202-513-7056

Chief
Commissioned Corps Operations Branch
202-513-7215

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The National Park Service Office of Public Health (OPH) and WASO Risk Management Division have jointly prepared and issued this summary.

I. Background

On March 11, 2011, a 9.0 magnitude earthquake occurred off the coast of Japan generating a tsunami that caused severe damage to infrastructure and tragic loss of human life. During this earthquake and resulting tsunami, the Fukushima Daiichi nuclear power plant was also damaged and is known to have emitted radioactive material into the environment. Due to the dynamic nature of this situation, there are many unknowns and conflicting information from various sources.

II. Current threat to U.S. and territories

U.S. government agencies are continuing to monitor the situation closely. To date, the impacts have been limited to the area surrounding the plant. **All available information continues to indicate that U.S. territories, including Guam and American Samoa, Hawaii, Alaska, and the continental U.S. are not expected to experience any harmful levels of radioactivity as a result of the crisis.** This assessment is based on many factors including status of the nuclear reactors, wind direction and speed, weather, and the significant distance between the power plant and the United States.

III. Radiation Exposure

Radiation is naturally present in the environment and we are constantly exposed to some level of it. Naturally occurring radiation comes from outer space (including sunlight), materials in the ground (including radon), and even within our own bodies. About half of the total annual average radiation exposure we receive comes from natural sources. The other half is mostly from diagnostic medical procedures such as x-rays. Adverse health effects arising from natural and man-made radiation are rare.

IV. Summary of potential human health effects of radiation exposure

Radiation exposure can damage living cells and, in turn, affect human health. Depending on the amount of exposure the damaged cells may: 1) repair themselves resulting in no residual damage; 2) die and be naturally replaced like millions of cells do every day; or 3) improperly repair themselves resulting in a biological change. There are two main categories of radiation exposure: acute and chronic.

- Chronic exposure occurs when a person receives a low dose of radiation over a long period of time. The potential health effects of a chronic exposure to radiation include certain types of cancer and genetic mutations.
- Acute exposure occurs when a person receives a high dose of radiation over a short period of time and may produce acute radiation syndrome (ARS) in the exposed person. Symptoms of ARS include initial symptoms of nausea, vomiting, and diarrhea. The second stage of symptoms for ARS may include loss of appetite, fatigue, fever, nausea, vomiting, diarrhea, and possibly seizures, coma, and death. The general population is considered to be at a low risk for exposure to high doses of radiation during a nuclear power plant accident.

V. What is the U.S. doing about the situation in Japan?

- The U.S. Nuclear Regulatory Commission (NRC), the federal agency responsible for overseeing nuclear safety, is monitoring the situation closely and providing technical assistance to the Japanese government. In March 17, 2011, NRC recommended that U.S. citizens living within 50 miles of the Fukushima power plant evacuate.
- The Environmental Protection Agency (EPA) has an existing system called RadNet for monitoring radiation levels in air, milk, rain and drinking water. In response to the crisis, the agency has deployed additional radiation monitoring equipment to Alaska, Hawaii, Guam, and western states and increased the frequency of its sampling.
- The U.S. Food and Drug Administration (FDA) is monitoring the U.S. food supply to ensure that imported food remains safe. There is no need worry about the safety of imported Japanese products that have already reached the United States and are in distribution
- The Centers for Disease Control and Prevention (CDC) is disseminating information provided by NRC and other radiation experts, providing health information for travelers, citizens and students living in or visiting Japan.

VI. What can I do to be better prepared for emergencies?

- Check with your community, child's school, employer, nursing home of a family member, etc. concerning emergency plans currently in place and become familiar with these plans.
- Take the time to develop an emergency plan for your family, making sure everyone is familiar with their individual roles and responsibilities.
- Put together an emergency kit for your home. Don't forget to include items such as a hand-operated can opener, radio and flashlight with extra batteries, essential prescription medications, and personal hygiene items.

VII. Information Resources

World Health Organization: http://www.who.int/hac/crises/jpn/faqs/en/index.html
International Atomic Energy Agency (IAEA): http://www.iaea.org/
CDC Emergency Preparedness and Response: http://www.bt.cdc.gov/radiation/
US Nuclear Regulatory Commission (NRC): http://www.nrc.gov/
US EPA, RadNet: http://www.epa.gov/enviro/facts/radnet/
FEMA: http://www.fema.gov/emergency/index.shtm

Contacts:

LTJG Rachael Lee (206) 220-4258 Office of Public Health, Seattle Station
LCDR Michael Quinn (202) 513-7214 WASO Risk Management Division, Washington, DC