



March 12, 2014

Current Situation at Fukushima Daiichi Power Plant

It has been three years since a devastating earthquake and tsunami hit Japan, causing the worst nuclear accident since Chernobyl. While the situation still remains critical in Japan, progress is being made tackling various issues at the stricken power plant. Plans are in place to decommission the facility; however, it will likely be decades before completion of the project. At the present time, work is continuing on maintaining stabilization of the reactor units, performing nitrogen injection to control the hydrogen concentration, removal of radioactive contaminants, and monitoring water temperature, water levels, and on-site radiation dose. In addition, removal of fuel rods from Unit 4 is underway. More information about the decommissioning plans can be found at Tokyo Electric Power Company's (TEPCO) website at: <http://www.tepco.co.jp/en/decommision/index-e.html>

The Hawaii Department of Health (HDOH) continues to monitor the results of surveys and monitoring performed by TEPCO, and does not anticipate any public health effect on beachgoers or seafood safety around the Hawaiian Islands, due to the following factors:

- **Water acts as a diluent.** While there may be significant quantities of radioactive material released into the sea near the Fukushima reactor site, the massive amount of water in the Pacific Ocean would rapidly dilute and disperse the materials to negligible levels.
- **Some radioactive isotopes rapidly decay.** For example, the half life of Iodine-131 (I-131) is about eight days. This means that the activity level of the I-131 isotope drops by half every eight days. Given the length of time since the event, the short-lived radionuclides would have decayed to near background levels and therefore pose no health hazard. Although Cesium isotopes have longer half-lives (Cs-134 has a half-life of about two years, Cs-137 a longer half-life of about 30 years), the radionuclides also undergo biological excretion and do not continue to build up in fish forever.

Seafood and Food Safety

HDOH continually monitors the situation at the Fukushima Daiichi Power Plant, and confers with the U.S. Environmental Protection Agency (EPA), U.S. Food and Drug Administration (FDA), and other entities regarding radiation safety. To date, FDA has no evidence that radionuclides from the Fukushima incident are present in the U.S. food supply at levels that would pose a public health concern. This is true for both FDA-

regulated food products imported from Japan and U.S. domestic food products, including seafood caught off the coast of the United States. Consequently, FDA is not advising consumers to alter their consumption of specific foods imported from Japan or domestically produced foods, including seafood.

<http://www.fda.gov/NewsEvents/PublicHealthFocus/ucm247403.htm>

HDOH also reviews scientific publications and reports from both private and public scientific institutions, to keep abreast of any potential impact on the ocean and sea life. Two well-known institutions have published documents and reports indicating that levels found thus far were well below public health concern:

Proceedings of the National Academy of Sciences (PNAS), "Evaluation of radiation doses and associated risk from the Fukushima nuclear accident to marine biota and human consumers of seafood"

<http://www.pnas.org/content/early/2013/05/30/1221834110.full.pdf>

Woods Hole Oceanographic Institute, "Fukushima and the Ocean"

<http://www.whoi.edu/oceanus/flipbook/oceanusv50n1/index.html>

Shoreline Surveys for Radiation and Japan Tsunami Marine Debris (JTMD)

HDOH continues to perform shoreline surveillance on Oahu, Kauai, Maui and the Big Island. Surveillance is performed on a quarterly basis, utilizing highly sensitive radiation detection equipment to measure radiation levels on the sand, rocks, and any marine debris that may have washed ashore. Should the need arise, surveillance may be performed more frequently. Results of the most recent surveys performed from July – December 2013 were consistent with normal background levels. Normal background radiation levels near the shoreline range from 1 to 5 microRoentgens per hour.

In addition HDOH's monitoring activities, two local entities have been performing monitoring of marine debris and sea water sampling for radionuclides:

The Kauai Chapter of the Surfrider Foundation periodically monitors marine debris for radioactive contamination during its cleanup projects. More information on their activities can be found here:

<http://kauai.surfrider.org/portfolio-item/fukushima-radiation-monitored/>

The Pacific Islands Ocean Observing System (PacIOOS) has performed seawater sampling over the past few years. More than 1,000 gallons of seawater was processed for cesium analysis in Dr. Dulaiova's lab between March 2011 and 2013. Data and results can be found at:

<http://oos.soest.hawaii.edu/pacioos/projects/fukushima/>



HDOH Staff Performing Shoreline Radiation Surveillance

Samples from Local Milk, Precipitation, and Drinking Water

Milk, precipitation, and drinking water samples continue to be collected following routine sampling protocols. Milk and drinking water samples are collected on a quarterly basis. Precipitation samples are collected as rain capture permits. Samples are sent to the EPA laboratory for analysis. Analysis of the data for 2013 continues to show typical fluctuations associated with background radiation. Detailed data and searches can be found at the following EPA website:

http://iaspub.epa.gov/enviro/erams_query_v2.simple_query

Radiation Air Monitor Shows Normal Background Radiation Levels

One stationary EPA RadNet air monitoring station in Honolulu continues to measure radiation levels throughout the state. Recent analysis continues to show typical fluctuations associated with background radiation. HDOH continues to work with other Federal, State and County partners to monitor the situation in Japan. The department is prepared to accelerate radiation sampling if the need arises. Near real-time air monitoring data can be found at EPA's website:

<http://epa.gov/radnet/radnet-data/radnet-honolulu-bq.html>

For additional information, please visit our webpage at

<http://health.hawaii.gov/irhb/japan2011/> or contact our radiation staff at (808) 586-4700.



EPA's RadNet Monitoring System – Honolulu



Precipitation Sampling – Honolulu