

Fears of health risks rise amid Japan crisis

March 15 2011, By MARILYNN MARCHIONE , AP Medical Writer

(AP) -- Fears about health risks rose dramatically in Japan Tuesday with news of a greater radiation release and renewed warnings to remaining residents within 20 miles to stay indoors.

Japanese officials said that more radiation was released at a nuclear plant disastrously damaged by last week's tsunami. Prime Minister Naoto Kan said radiation had spread from four reactors.

"The level seems very high, and there is still a very high risk of more radiation coming out," he said.

[Thyroid cancer](#) is the most immediate risk, and the Japanese government made plans to distribute potassium iodide pills to prevent it. Worse case scenarios - lots of radioactive fallout - can lead to other cancers years later.

Even a meltdown would not necessarily mean medical doom, experts said. It depends on the amount and type of radioactive materials.

Donald Olander, professor emeritus of nuclear engineering at the University of California at Berkeley, said even the much higher levels of radiation are "not a health hazard."

The world has seen two big [nuclear reactor](#) scares - in 1986 at the Chernobyl plant in the Ukraine, and in 1979 at the Three Mile Island plant in Pennsylvania.

At Three Mile Island, even though a quarter of the reactor core melted, the steel containment structure held. The radiation released was so minuscule that it did not threaten health - the equivalent of a chest X-ray to local folks.

At Chernobyl, where there was no containment vessel, far more radioactive material was released, and of a more dangerous type than at Three Mile Island. It stayed in soil and got into plants in the Ukraine, contaminating milk and meat for decades. Thousands of children developed thyroid cancer from [radiation exposure](#), and scientists are still working to document other possible health problems.

The lessons have not been lost on the Japanese as they grapple with the Fukushima Dai-ichi power plant, whose cooling systems failed after a power outage from the massive earthquake last week.

They have evacuated 180,000 people from areas near the troubled reactors, where relatively minimal fallout was mostly confined at first. They've told people still in the area to wear masks, which can keep radioactive particles from being inhaled.

Most importantly, they have stockpiled and are making plans to give out potassium iodide - pills that can keep radioactive iodine from being taken up by the thyroid gland and causing cancer.

"Those are all preventable cancers" if the protective pills are taken right after exposure, said University of New Mexico radiologist Dr. Fred Mettler. He led an international group that studied health effects of the Chernobyl disaster and is a U.S. representative to the United Nations on radiation safety.

At Chernobyl "they had millions of square kilometers to cover and it was all rural areas and they didn't really have anything stockpiled," he said.

The Russian reactor also lacked a containment vessel like those in Japan and the United States to prevent or minimize release of the more dangerous types of radioactive materials, Mettler said.

"Right now it's worse than Three Mile Island," Olander said, but isn't near the Chernobyl situation. Some radioactive iodine was released before the latest crisis Tuesday. Iodine is relatively short-lived, and potassium iodide pills can be used to block its uptake.

Of greater concern is the release of cesium, which officials had said was released in small amounts earlier. Cesium is absorbed throughout the body - not just by the thyroid - and stays in organs, tissue and the environment much longer, Mettler explained.

Cesium particles are relatively large and heavy, so they would not likely travel far in a plume. Much of it would drop near the reactor site, and officials hope, may be carried by winds east over the Pacific Ocean where it would fall harmlessly, Mettler said.

Any release of cesium is a concern environmentally and for health, said Jacqueline Williams, a radiation biologist and safety expert at the University of Rochester Medical Center in upstate New York.

"Prior to Chernobyl, we believed that the cesium would be diluted out, that once the cloud went through and it rained, the cesium would be washed out. What we found out was there was an accumulation of cesium in certain types of vegetation, and it accumulated rather than diluted," she said.

Animals fed on the vegetation and became contaminated, and meat and milk were affected.

"You can't be quite so blase about the fallout," Williams said.

At Three Mile Island, however, "the public health risk was close to zero because the [radiation](#) was contained within the site itself," Williams said.

Mettler agreed. The research he led in Russia documented 6,000 to 7,000 additional cases of thyroid cancer in people who were children and teens when Chernobyl occurred, "and there are questionable increases of leukemia in the cleanup workers but it's not certain."

And were there long-lasting problems from Three Mile Island?

"Not that most of the scientific community believes," Mettler said.

More information:

EPA: 1.usa.gov/gt46aP

NRC: www.nrc.gov/about-nrc/radiatio...-health-effects.html

Three Mile Island: www.nrc.gov/reading-rm/doc-col...eets/3mile-isle.html

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