

# Nuclear Fallout Jitters

by Ricka McNaughton

Bill Irwin was home perusing the news of the hour on the Internet when he learned of the reactor crisis after the Fukushima Daiichi nuclear plant was shaken by a 9.0 earthquake on March 11, then swamped by a tsunami. "After the first reactor event, I knew the story was about more than the tsunami," he recounted soberly. "When the second reactor had a similar explosion and release, I knew that this was going to be something very bad for the people of Japan."

Irwin ought to know. He is the radiological health chief with the Vermont Department of Health and before that was a Harvard health physicist.

Nearly three weeks out, workers at the stricken nuclear plant are still struggling to stabilize the reactors and have spent fuel pools to curtail the spread of radioactive contamination. Much of the world is sending heartfelt support and assistance to the Japanese. At the same time, we who are not physicists clamor for information we can understand about health perils from wafting fallout. Public health officials in Vermont were prepared for that. Preparing and communicating is a lot of what they do.

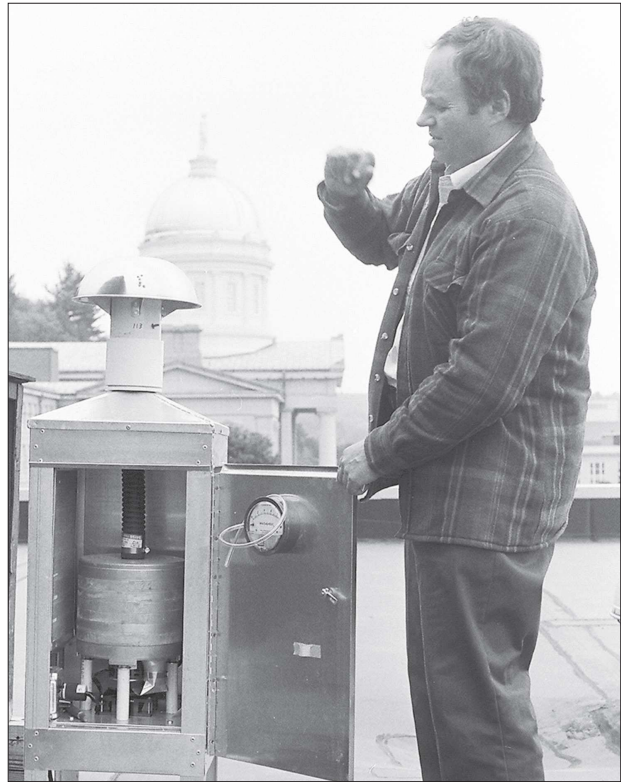
For example, the health department's website, [healthvermont.gov](http://healthvermont.gov), offers plain-talk updates on what ultrasensitive instruments are picking up for radioactive particles here and elsewhere, and what the data means. The site also features detailed FAQs and links for more in-depth reading. In the last update as of this writing, health commissioner Harry Chen advised: "Radioactivity resulting from the tragedy in Japan is being measured across the states, and now in Vermont. . . . These are minuscule amounts compared to what we experience in everyday life. There is no health risk here, and no reason for anyone to take special precautions." Federal agencies are monitoring radiation releases as well.

Twenty-five years ago this month, when the Chernobyl nuclear plant failed in what is now Ukraine, the Internet was not yet a monster information portal for the masses. Soviet officials initially withheld word of the disaster until, on April 28, workers at the nu-

clear power plant in Forsmark, Sweden, began to detect elevated levels of radioactive contamination on their clothes. Ruling out their own facility, the Swedes began to sniff around. Soon, all eyes became focused on the sinister plume of smoke carrying radioactive material across eastern Europe and beyond. At that time, Paul Clemons was a physicist and chief of operations in the then-called Division of Occupational and Radiological Health, located in Montpelier. Clemons heard about Chernobyl over his office radio as it was first reported by the Swedish Wire Service.

Clemons then placed a call of inquiry to his contact person in the regional office of the federal Environmental Protection Agency. Unofficially, his call amounted to the EPA's first notice of the events at Chernobyl. Clemons hastily enlisted a state maintenance crew to help enlarge the rainwater- and air-sample collector on the roof of an adjacent building. Within two hours they had improvised the necessary alterations. The finished product looked something like a home moonshine operation. But functionally, it was just the ticket.

In the spring of 1986, a post-Chernobyl sample taken from the rooftop collector in Montpelier gave an infinitesimal reading of 43 picocuries. For perspective, a hospital uses between 200,000 and 300,000 picocuries to obtain a diagnostic image of the thyroid with radioactive iodine. Assuming that the 43 picocuries was a per-liter rainwater reading, Irwin said that the 1986 sample falls into the range that Massachusetts and Pennsylvania are seeing now. He noted that Vermont has been sampling and analyzing water, rain, air, soil, river sediment, vegetation, fungi, milk and other food products since 1970, before Vermont's own nuclear power facility was built. Because of this background data, analysts can adjust for substances that were already here. We still have, for example, fading residue from nuclear weapons testing in the 1950s and 1960s. Irwin predicts a Fukushima fallout are similar to post-Chernobyl readings, i.e., a gradual, minute accumulation posing no health threat to Vermonters, and then a decline over the years in readings of radioac-



In this 1986 photo taken after the Chernobyl nuclear plant disaster, Paul Clemons, then a state public health physicist, demonstrates his Montpelier rooftop device for monitoring air and water samples. Photo by Ricka McNaughton.

tive materials. Vermont so far has no detectable levels in water or milk samples.

How relieved should we feel? Whether you are for, against or confused about the risks of nuclear energy, the tragedy in Japan begs the recalibration of the cost/benefit ratio. Maybe we should call it the catastrophe/benefit ratio. Fukushima demonstrated

that, in the twitch of a tectonic plate, facilities that are built to accepted standards of modern safety can still fail catastrophically.

*Some of the source material for this article derived from a story the author wrote in 1986 for a state government periodical of that time.*

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## ATTENTION PARENTS of Montpelier 3- and 4-year-old Pre-Kindergarten Children

The Montpelier School District supports publicly funded pre-kindergarten for children between the ages of 3 and 5 who reside in Montpelier.

Publicly funded pre-kindergarten is defined as six to ten hours per week, thirty-five weeks per year, of developmentally appropriate learning experiences that are based on Vermont's Early Learning Standards. Children who reside in Montpelier and are between the ages of three to five are eligible. Pre-kindergarten education is limited to the academic school year.

The Montpelier School District's publicly funded pre-kindergarten programs are located in three community private early care and education programs that meet specific quality standards. The early care and education programs that the Montpelier School District partners with are:

- The Family Center of Washington County
- Turtle Island Children's Center
- Waldorf Child's Garden

The pre-kindergarten program offered through a partner may charge families the difference between the actual costs of providing the 6 to 10 hour pre-kindergarten program and what the Montpelier School District pays. Families would continue to be charged fully for whatever care and education program the child needs beyond the 10 hours per week during the academic year.

*Please note: If we receive more applications than we have funding to support, then we will use a random selection process to determine which children receive publicly funded pre-kindergarten education. We will inform you whether your child has a slot by May 20, 2011.*

If you are interested in learning more about these pre-kindergarten options or would like to submit an application for your child, please contact either The Family Center of Washington County at 262-3292, Turtle Island Children's Center at 229-4047, or Waldorf Child's Garden at 223-4338 by April 29, 2011.