

Submarine Accidents: Understated, Under-Reported, Undersea

By John LaForge

Ever wonder what the world's military submarines do on patrol? The only time we read about them is following a deadly accident. Are they worth the risk of keeping them at sea?

The frequency of grim and dirty accidents — like mine disasters with men trapped underground — brings to mind a statement by a past director of the International Atomic Energy Agency, Sigvard Eklund. After the 1979 disaster at Three Mile Island, and its unmeasured releases of radiation (monitors went off-scale), Eklund said, "The problem of the nuclear-power industry is that we have too few accidents. It's expensive, but that's how you gain experience."

Since the year 2000, there have been 16 serious accidents involving submarines: six with U.S. subs, three Russian incidents, the same British sub twice, and one each involving Chinese, Canadian and Australian subs. A thumbnail sketch:

Candu Reactors Can't

By Bonnie Urfer

A new report from Greenpeace suggests that Canadians with children under four and pregnant women should avoid living within 10 kilometers of a Canadian-style Candu reactor. People within 5 kilometers should not "consume food from their own gardens, bee hives and orchards, or wild foods, e.g., blackberries and mushrooms, growing very near the facilities," due to high levels of radioactive tritium. Candu reactors produce hundreds of times more tritium than other reactor designs, and the Great Lakes and near-reactor groundwater have become dumping grounds with two-thirds of the radioactivity in Lakes Huron and Ontario coming from Candu reactors.

Greenpeace's 92-page *Tritium Hazard Report: Pollution and Radiation Risk from Canadian Nuclear Facilities*, by Dr. Ian Fairlie, a British radiation expert, says Canada's safe drinking water standard is lax. It allows contamination 10 times more dangerous than U.S. limits and 100 times higher than those allowed in Europe. "Scientific concerns about tritium's hazards are inadequately recognized by Canada's nuclear regulators," the study contends. The Canadian Nuclear Safety Commission (CNSC) sees no threat from tritium, while the Toronto Board of Health considers drinking water standards out of date and urges that they be tightened.

An Ontario government panel recommended in 1994 that the province set strict tritium limits in drinking water and then to tighten those limits further over a 5-year period. The recommendation was never adopted. It would likely have led to occasional shutdowns of drinking water treatment facilities after radioactive releases from reactors. (See the report at: www.greenpeace.org/raw/content/canada/en/documents-and-links/publications/tritium-hazard-report-pollu.pdf)

A radioactive hazard has developed at Port Hope in Ontario where Cameco Corporation has contaminated soil under its hexafluoride fabrication facility. The company is the world's largest producer of uranium hexafluoride (UF₆, or "depleted" uranium), a part of reactor fuel production. The factory has been shut down pending investigation.

Ontario Power has been criticized for unsafe operations, withholding information and tardy repairs to a break in a radiation containment system at its Pickering B reactor's Unit 5 on Lake Ontario, 19 miles from Toronto. A radiation leak from the break was confirmed by the CNSC and Ontario Power Generation. The leak was found in a huge concrete duct system that connects eight Pickering reactors to a 71-meter-tall vacuum building designed to retain and contain radiation releases during an accident. An anonymous "concerned employee" notified the *Toronto Star* of the radiation leak.

A report produced by nuclear weapons specialist John Clearwater for Canadian Defense Minister Gordon O'Connor divulges that 689 Canadians were exposed to radiation from U.S. and Canadian nuclear bomb tests, with another 191 servicemen contaminated in the 1952 and 1958 "clean-up" operations after two reactor accidents in Chalk River, Ontario, 100 miles east of Ottawa. The purpose of the report was to discover the extent of Canadian participation in bomb tests, details on radiation produced by the blasts, and the names of individual participants. No effort was made to contact the people who took part. In the 1952 accident, Chalk River crews worked in 10 minute shifts to limit their exposure and wore heavy underwear to protect their genitals from being splashed with radioactive water. The 1958 calamity involved a fuel rupture and fire that also required major clean up operations.

BARREL DOCUMENTS ON THE WEB

Nukewatch has a new page on our website regarding Honeywell's toxic and possibly radioactive military waste dumped into Lake Superior by the Corps of Engineers. The information can be accessed using a link on our homepage, or at nukewatch.com/barrels/. The site is an excellent primer on the issue with an overview and dozens of documents and articles dating back to 1976. We are grateful to Nukewatch Intern Jennifer Hauf for her website work and to researcher Greg Price of Duluth for compiling original news, reports and commentary on the scandal. A hard copy of Greg's 100-page compilation can be obtained for \$17 plus postage from the UPS Store, Central Entrance, Duluth, MN 55811.

HMS Tireless: On May 12, 2000, this British fast-attack sub caused a loss-of-coolant accident in which an undisclosed amount of highly radioactive reactor coolant poured into the Mediterranean Sea. The stricken sub caused a diplomatic uproar with Spain when it was docked illegally at Gibraltar and spent a year there undergoing dangerous repairs involving the unorthodox ship-to-shore movement of its nuclear weapons.

Kursk: On August 12, 2000, up to five of the sub's torpedoes exploded, sinking the giant 508-foot nuclear-powered sub in the Barents Sea, 354 feet down, killing the entire crew of 118. Its 24 Granit missiles were said by the Russian Navy to not have been armed with the 500-kiloton thermonuclear warheads it was able to carry.

USS Greenville: The Los Angeles class fast-attack smashed into and sank the Japanese teaching vessel *Ehime-Maru*, February 9, 2001, killing nine Japanese students.

USS Dolphin: This diesel-electric research sub suffered a major flood and fire, May 21, 2002, when a torpedo door gasket failed. The 70 to 85 tons of seawater that flooded the ship shorted electrical panels and started fires. The captain ordered the crew to abandon ship. It was recovered and repaired in 2004 at a cost of \$50 million, and retired from service in 2006.

HMAS Dechaineux: This diesel-powered Australian sub with a crew of 55 was flooded off the coast of Perth Feb. 12, 2003, and came within 20 seconds of sinking.

Ming-361: On April 16, 2003, all 70 crew members of this Chinese submarine perished off the coast of northeast China. It is suspected that the failure of its diesel engines used up all the oxygen in the boat, causing the crew's suffocation.

Russian K-159: On August 30, 2003 the nuclear-powered K-159 sank 780 feet in the Barents Sea while being towed back to port, killing nine crewmen.

USS Hartford: This fast-attack submarine ran aground October 25, 2003 in a harbor in northern Sardinia, Italy.

Russian K-223: In November 2004, an explosion and fire occurred during repair work underway in the Kamchatka region of Far East Russia. One crewman, Dmitry Koval, suffered a fatal brain injury caused by the explosion of a torpedo cooling tank.

HMCS Chicoutimi: This Canadian sub suffered a deadly fire Oct. 5, 2004 that killed Lt. Chris Saunders, who died in transit to the hospital.

USS San Francisco: On January 8, 2005, this fast-attack submarine collided virtually head-on with an undersea mountain 350 miles south of Guam. Joseph Allen Ashley, 24, died of injuries suffered in the accident, which occurred when the submarine was on a high speed run at approximately 35 knots.

AS-28: On August 5, 2005 this Russian Deep Submergence Rescue Vehicle became entangled by a fishing net. The crew was rescued.

USS Minneapolis-St. Paul: Four crew members of this fast-attack sub were washed overboard by heavy waves on December 29, 2006, in Plymouth Sound, England. Chief Thomas Higgins and sonar technician Michael Holtz were drowned.

USS Newport News: On January 8, 2007, the *Newport News* was moving submerged (not surfacing) in the Straits of Hormuz when it hit the Japanese tanker *Mogamigawa*. The sub had been a part of the Carrier Strike Group being used to threaten Iran and was led by the aircraft carrier *USS Dwight D. Eisenhower*.

HMS Tireless (again): On March 21, 2007 two crew members of the accident-prone *Tireless* were killed in an explosion in the forward section of the sub while it was in the Arctic Ocean.

Russian sub, unnamed: On July 26, 2007, a small explosion occurred on a Russian navy submarine, believed to have a nuclear reactor on board, as it underwent repairs at a dockyard in the port of Severodvinsk, on the White Sea. The Interfax news agency reported that the explosion damaged a 25 square meter section of the submarine's hull.

Addendum: On April 7, 1989, the Russian sub *Kosomolets* caught on fire and sank in the Norwegian Sea in 5,000 feet of water, killing all 42 men on board. The nuclear-powered submarine had two nuclear-armed torpedoes on board and neither the warheads nor the sub were recovered. In 1995, the Russian government sent an underwater mission to seal fractures in the submarine's hull and later claimed that radioactive contamination — which it did not deny — would be "negligible until 2015."

Continued from Cover

Superior Barrel Dump Scandal

Corps supervisor had reported that there were at least 16 dump sites.

In February 1995, Herb Bergson — then mayor of Superior, now mayor of Duluth — threatened to sue the Army, the MPCA and Honeywell over a cleanup. No law suit has materialized. Today, only the Red Cliff Band of Lake Superior Chippewa and Rep. Jaros appear committed enough to protecting the drinking water to confront the issue directly. The Red Cliff Band is pursuing removal of some barrels under its own authority as a sovereign nation.

The Army, Honeywell, the EPA and the MPCA must be compelled do their legal duty and see that the Great Lakes are protected from the cancer-causing toxics in the barrels. To

Commentary

Barrels Are Part of Vast Oceanic Misconduct

By Jennifer Hauf

As a resident of Milwaukee who just recently began working with Nukewatch, I didn't know anything about the scandal involving the barrels dumped by the Army Corps of Engineers into Lake Superior. I was equally unaware of the more widespread dumping of toxic waste into the Pacific and Atlantic Oceans between the First World War and the Vietnam War. During that time the government created an undetermined — indeed, impossible to determine — number of dumps off the coasts of the United States, where millions of pounds of nerve and mustard agents lie in decaying barrels and canisters. When they leak — and an untold number have begun to — they kill and injure marine life. As of 2005, more than 200 of the fishermen who have pulled them up in dredges have been burned by mustard gas. Hundreds of thousands of bombs, land mines and rockets, filled with chemicals, were also dumped.

And there are the more than 500 tons of radioactive waste, already entering the oceanic food chain or poised to do so.

The 26 military dumping zones in our oceans must look like the bottom of Lake Superior. A headline in the *Duluth News Tribune* from 1992 reads "Lake floor a landfill for Army: Depths of Lake Superior 'pretty disgusting.'" Wisconsin and Minnesotan fishing boats have pulled up bombs, shells and rockets over the years. It was fisherman Stanley Sivertson of Duluth who first pulled up a Lake Superior barrel in 1968, alerting the public to their existence. Residents would not have known of them otherwise.

Honeywell and 3M, the firms which produced the waste now at the bottom of the lake, were both licensed to use radioactive materials during the time that wastes were dumped. The military barrels with radioactive and other toxic wastes used in ocean dumps are identical to the barrels that are currently rusting away in Lake Superior. Given that only nine barrels out of the more than 1,450 have had their contents

insure public and environmental safety, the responsible parties should be required:

- * To fund an independent scientific confirmation of the presence or absence of radioactive materials in the barrels, to identify and characterize the specific contents of the barrels, and to publicly identify their locations.

- * To fund an investigation into the state of the barrels' decay and the contamination, if any, of surrounding sediment.

- * To fund a barrel dump remediation program that does not threaten to contaminate drinking water sources — even if this means extending the water intake point away from the barrels.

Mayor Bergson complained in 1995 that, "The contents of at least 1,448 barrels are still unknown to the public," and that "The location of many of the barrels is still unknown."

Twelve years later, it's about time for answers.

analyzed, there is reason for outrage. That these barrels are so close to Duluth's water pumping station, which provides the city with its drinking water, leads to even more cause for concern.

I've been putting into chronological order a flabbergasting, lengthy compilation done by researcher Greg Price of Duluth. It's a collection of letters, articles, fact sheets and other documents on the barrels. As I began studying the reports, it was very interesting to see how the barrel story has gone on and off of the media radar during the past 30 years. The first five documents are from 1976 and 1977. The next document concerning the barrels is from 1990 — a 13-year gap! There are several documents from 1990, as that was the year that barrels were actually pulled up from the lake and analyzed, and a few from each following year, up to 1995. After that year there aren't any documents until 2002.

It's impossible to give a concrete reason for the waxing and waning of media interest. Due to the sparse media coverage, many folks in Duluth and Superior aren't even aware of the waste lurking in the water. A politically active friend of mine who has lived in Superior for a couple of years didn't find out about the barrels until last December. He says that "the vast majority of people in Duluth are ignorant of their existence." He added that those who do know about the barrels only have a vague idea of their presence and assume that they are "harmless."

We must educate people about what is in the water. And since we have such little hard data to work with — nine analyzed barrels, another reportedly emitting a high radiation reading — it is crucial to look further into the contents of the barrels, a task requiring a united community and pressure on political leaders. Lake Superior is the world's largest lake and the cleanest of our Great Lakes. It gives us drink, food, scenery and a good cool breeze in the summertime. The least we can do is protect it from the wastes of war.

— Jennifer Hauf is a Nukewatch Intern.