

THE DEW LINE

Ditched drums and all

By K. L. Capozza

HIGH ABOVE A BARREN GRANITE CLIFF ON THE SOUTHEASTERN tip of Canada's Baffin Island, a series of golf ball-shaped white domes tower above the turquoise Arctic waters. This remote radar encampment, abandoned after the Cold War, is leaking a variety of toxic substances into the Arctic environment. Ironically, Distant Early Warning (DEW) line sites like

the one on Baffin Island are being considered for national recognition under a bill—sponsored by Cong. Joel Hefley, a Republican from Colorado—that asks the Interior Department to evaluate Cold War sites and resources for commemoration.

But for the far northern communities that live next door to these now-defunct sites, the DEW line is an environmental blight that is polluting the Arctic ecosystem and costing foreign governments hundreds of millions of dollars to clean up.

The problem

Between 1952 and 1957, the United States hastily built the DEW line, a vast network of radar warning sites between Alaska and Greenland that roughly traced the 69th parallel. This massive project, aimed at providing an early warning of a Soviet bomber attack from the north, cost more than \$7 billion (in 2001 dollars) over its 40-year lifetime.

In the wake of an influential 1951 study by Massachusetts Institute of Technology scientists that exposed the vulnerability of the United States to a polar attack, Defense Secretary

Robert A. Lovett asked a team of private industry experts to build a northern line of defense. When it was completed the DEW line provided a two-hour warning against manned Soviet bombers. It could not warn of incoming intercontinental ballistic missiles, however, and quickly became of limited use after the Soviet Union launched Sputnik in 1957. Sites began closing in 1963; the last closed in 1993.

The DEW line was one of the most expensive military projects ever initiated in peacetime. Over the course of its construction, 7,500 workers and 45,000 paneloads of radar equipment and heavy machinery were brought to far-flung Arctic hamlets. Over the years, as transformers and other equipment were discarded in makeshift dumps, polychlorinated biphenyls (PCBs) and other toxic substances began leeching into the fragile Arctic environment. Beginning in the 1960s and accelerating as the Cold War thawed, the United States gradually gave some sites over to Canada and Greenland but made little effort to clean up the lingering mess. Now 63 radar sites sit in various stages of disrepair across the northern tundra.

Remediation in Canada alone is projected to cost \$470 million. In 1998, after years of diplomatic pressure, the United States reluctantly committed \$100 million to the Canadian remediation effort in the form of credit toward the purchase of American military equipment. The deal touched off a heated debate in Canada where it was regarded by the public as a token payment designed to absolve the U.S. government of its responsibility.

“This was a back room deal between two defense departments that was truly scandalous at the time,” said Kevin O’Reilly, research director for the Canadian Arctic Resources Committee, a northern citizens action group.

The “arms-for-cleanup deal,” he noted, “signed away our ability to get any future compensation.”

According to Canadian diplomatic documents, Republican Senators Ted Stevens from Alaska and James Inhofe from Oklahoma opposed the \$100 million payment, fearing it would set a dangerous precedent for obligations at other U.S. military installations abroad.

In the end, U.S. negotiators told their Canadian counterparts that they would pay for environmental damage only if it posed a “significant endangerment to human health,” according to the Canadian documents.

Worst case scenario

The Resolution Island site—located

near Frobisher Bay in the new Canadian territory of Nunavut—is the most polluted site in the Canadian north, according to Scott Mitchell, contaminated sites director for the Department of Indian and Northern Affairs. Cleanup there alone, he estimates, could eat up a third of the U.S. payment. Built in 1953, the site was part of an extension of the DEW line called the Pine Tree Line.

“Looking at what we found there, you’d think that the Americans took big hoses and sprayed PCB liquid all over the site,” says Robert Eno, a Canadian hazardous waste specialist who was on the assessment team that first uncovered PCBs at the DEW line sites in 1991.

Harry Flaherty, a soft-spoken Inuit from Iqaluit on Baffin Island, leads the hazardous waste team hired to clean up Resolution Island. Each summer he sorts through mountains of rusted oil drums, leaking transformers, discarded heavy machinery, solvents, and batteries.

Last year, the team laid down floating spill booms, often used to soak up oil slicks, to absorb a rivulet of PCB-laced liquid that was dripping into Brewer Bay where beluga and bowhead whales calve.

“I think they [the U.S. military] did major damage,” says Flaherty. “According to the elders that used to camp around that area, this used to be where birds nested. There are no birds whatsoever in that area now.”

The quintessential symbol of the Arctic, the polar bear, might also be affected by pollution at the site, claims Flaherty. “This site is the polar bear denning area for the region. We eat the polar bear and in the past studies that have been done, they [the bears] seem to have a high level of PCBs,” he says.

More than 30 tons of PCBs were brought to the Arctic in the construction and maintenance of the DEW line. Discarded transformers made to withstand extreme temperatures and high electrical currents are the primary sources.

“These transformers were used at all the defense sites in the Arctic, and when they finally broke down, often times they were dumped out the back door,” says Carl Hild, director of the Institute for Circumpolar Health Studies at the University of Alaska Anchorage.

Back across the border

In Alaska—where 20 DEW line sites mark the northern coast of the Beaufort Sea between Point Hope, Alaska, and the Canadian Arctic border—communities have been more successful in pressuring the U.S. government to contain and remove toxic



Sunrise at the DEW line station at Point Barrow, Alaska, 1994.

The frigid Arctic climate and lack of sunlight impede the natural breakdown of pollution. Five decades later, PCB, heavy metal, and fuel contamination persist in the delicate Arctic ecosystem. “In the Arctic, fat is the economy of life. Animals eat each other’s fat in order to stay warm because it’s the most efficient way of transferring heat and energy,” says Hild. “When they [PCBs] get into the environment, they don’t break down, and they bio-accumulate because they stick to fat and move through the food chain.”

Arctic natives depend on wildlife for survival. The animals that have sustained them for centuries—walrus, seal, whale, and polar bear—now carry high burdens of contaminants.

Across the frigid waters of Davis Strait, the Inuit in Greenland say four DEW line sites built on their island during the 1950s were also abandoned and forgotten. “Those DEW line sites probably won’t ever get cleaned up,” predicts Aqaluq Lyngé, president of the Inuit Circumpolar Conference.

pollutants because they’re protected by U.S. environmental laws.

But some Alaskan communities say the clean up is too little too late. For example, the 800-person hamlet of Hooper Bay recently learned of a series of past oil spills from the Cape Romanzof long-range radar site that contaminated their water supply and hunting grounds. “In 1998, we ran across a remediation plan to address 15 spills at Cape Romanzof and that’s the first time we had heard of such a thing,” says Harold Napoleon, a Hooper Bay Yupik leader.

Napoleon grew up in the shadow of the radar complex, which he later learned had spilled 80,000 gallons of petroleum over the past 48 years. In 1984, the U.S. Fish and Wildlife Service found petroleum, DDT, and PCB contamination in foxes, voles, and trout—animals that Hooper Bay residents hunt and eat. PCBs are now known to cause cancer, bacterial infection, liver lesions, and genetic defects in animals. The now-banned pesticide DDT adversely affects the nervous system, especially in developing children.

“The reason they [the air force] gave for not cleaning it up was that there is no risk to humans. They never warned us about these spills and we all drank from that stream all these years,” says Napoleon, referring to the military-named Spoiler Creek near his home.

The Army Corps of Engineers is currently conducting a study of subsistence wildlife to determine the extent of damage to the local food chain.

Some 500 miles north of Hooper Bay, the hunting community of Point Hope is facing a similar threat. They suspect pollution from the Cape Lisburne DEW line site near their village has contaminated traditional food sources. The hunting and consuming of wildlife is closely tied to Inupiat Eskimo identity, says Caroline Cannon, Point Hope’s mayor. “We

know that there’s a possibility of our food being affected, but we believe that the food we eat is part of who we are,” says Cannon. In spite of these uncertainties, the community will continue to hunt and eat as it always has, she says.

Further contamination from the site is unlikely, says Tamar Stephens, Alaska’s Cape Lisburne cleanup project leader, because the heavy PCB contamination found there is now contained.

For its part, the Army Corps of Engineers expects to spend \$545 million cleaning up former military sites in Alaska. “When the army was done with something up here, they just threw it away,” says John Killo-ran, the Army Corps’s Alaska spokesperson. Now, it’s the army’s responsibility to go back and mop

up their messes, he says.

The size and scope of the DEW line and now the laborious cleanup of its environmental legacy have left an indelible mark on the Arctic. And if the epic project is to be commemorated, as Hefley’s bill proposes, it should also be recognized for the environmental damage that it caused, says Kevin O’Reilly.

“There’s no question that the DEW line dramatically changed the Arctic—economically, socially—but also environmentally,” he said. *

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NUCLEAR TRANSPORT

The big “what-if”

By Bret Lortie

WHEN A TRAIN CARRYING HAZARDOUS materials caught fire on July 18, 2001, in a tunnel under downtown Baltimore, it burned for more than a day. Nearby residents choked on noxious fumes, local business slowed, and national Internet services momentarily sputtered.

But what if the cargo had included some of the nuclear waste that is expected to be moved to a central repository at Yucca Mountain in Nevada?

According to the Association of American Railroads, spent nuclear fuel would be moved only on dedicated trains. But Bob Halstead, a transportation adviser for the state

of Nevada, says that reality is somewhat different. “Some years ago the utilities and the Energy Department won a court case that said railroads could not require the use of dedicated trains,” he told me. And Energy’s current draft Environmental Impact Statement for Yucca Mountain assumes that spent nuclear fuel casks could all be shipped in general freight service.

Under ideal circumstances, transporting casks of nuclear waste shouldn’t pose much of a threat. The casks are designed to handle all sorts of road and rail hazards, from high-speed crashes to major derailments and bridge collapses.

But the Baltimore incident is a classic “low probability, high consequence” scenario. Nuclear waste casks are required to withstand “an engulfing fire” (burning at 1,475 degrees Fahrenheit) for 30 minutes. What would happen if some were caught in a long, hot fire like that in Baltimore? The current design standards for high-level nuclear waste containers set by the Nuclear Regulatory Commission (NRC) might be adequate in most circumstances, but put a fire inside a tunnel, add combustibles from other cars, and train tunnel fires can get much, much hotter.

The *Baltimore Sun* reported that