

North Korean threats make Bay Area ponder the unthinkable: a nuclear attack



By [CASEY TOLAN](mailto:ctolan@bayareanewsgroup.com) | ctolan@bayareanewsgroup.com and [MATTHIAS GAFNI](mailto:mgafni@bayareanewsgroup.com) | mgafni@bayareanewsgroup.com | Bay Area News Group
PUBLISHED: August 9, 2017 at 12:17 pm | UPDATED: August 10, 2017 at 9:44 am

SAN FRANCISCO — For the first time since the end of the Cold War, Bay Area residents are being forced to confront the unthinkable: the possibility of a nuclear attack on our own soil.

It's a scenario that suddenly became real after reports that the North Korean government has figured out how to make a nuclear warhead small enough to fit on an intercontinental missile — and after [President Donald Trump vowed North Koreans would face](#) “fire and fury” if they continued making threats, in an apparently improvised public response.

A nuclear strike would be devastating to the Bay Area, and there's no preparation that could avoid that. But there are a few simple steps — like staying inside instead of trying to flee — that can help prevent radiation poisoning and save lives, experts say.

As geopolitical tensions ramped up this week, the North Korean military said it is studying missile attacks on Guam — and the U.S. mainland. “The provocative war the U.S. has devised and plans to execute will be countered with a just all-out war of wiping out all the strongholds of the enemies, including the U.S. mainland,” a North Korean military spokesman [said in a statement Tuesday](#).

It's not clear how close the North Koreans actually are to being able to attack the West Coast or the rest of the United States. Even if their missiles can reach across the Pacific, one of the hardest parts of engineering a nuclear attack is getting the warhead to survive the re-entry into the earth's atmosphere, and there's no evidence yet that they've figured it out.

But imagine that a missile attack succeeded, targeted on San Francisco. The latest North Korean nuclear test is estimated to have the explosive power of 20-30 kilotons — equivalent to 20,000 to 30,000 tons of TNT going off at once. That's more than the 15- and 20-kiloton strength of the bombs the United States dropped on Hiroshima and Nagasaki in 1945, but far less than the 2,000-some kiloton Soviet missiles aimed at the U.S. during the height of the Cold War.

First, there would be an explosion — a fireball roughly a third of a mile wide with temperatures equal to the surface of the sun. A blast wave would knock down most buildings within a half-mile of the explosion. A flash of thermal energy would burn exposed people within a mile of the detonation and temporarily blind those looking toward it. Up to several miles away from the detonation, there would be less severe damage, like shattered windows.

Then, there would be deadly radiation. Debris from the explosion would be sucked upwards into a giant mushroom cloud and then carried downwind. This would be the threat that concerns most of us: Falling particles the size of grains of sands sprinkling down across the Bay Area would emit gamma rays that could give people severe radiation poisoning.

The most dangerous zone would be 10 to 20 miles downwind of the explosion, while some fallout could occur 100 miles away or farther, depending on the magnitude of the explosion. (Communities upwind and far enough away from the explosion would escape relatively unharmed.)

“The bottom line is you're looking at an incredible human catastrophe,” said Jeffrey Lewis, a nuclear weapons expert at the James Martin Center for Nonproliferation Studies in Monterey. “The trick is to not have the nuclear war in the first place.”

The best thing to do in the event of an attack, experts say, is get inside, ideally in a basement or interior stairwell that puts as much building material between you and potential radiation as possible. Staying inside for 12 to 24 hours is best, but staying sheltered for at least the first hour is the most important.

“When you're looking at a high population density area like the Bay Area, you can save hundreds of thousands of people from significant exposure if we just get people inside after the nuclear detonation,” said Brooke Buddemeier, a health

physicist at Lawrence Livermore National Laboratory who studies the effects of nuclear detonations.

San Francisco's Department of Emergency Management doesn't have specific preparations in place for a nuclear missile strike, but it has prepared for other nuclear events. "While a nuclear missile attack is a thing from the Cold War, what local agencies including ours have been planning and preparing for is a radiological device or a dirty bomb," said Francis Zamora, a spokesman for the city's department. Officials have stockpiles of radiation detection devices ready to go.

The first warnings of an imminent attack would come from federal radar, and local, state and federal officials would send out warning messages via phone alerts and broadcasts over air sirens — but it's not clear how long we'd have between the first warnings and an attack.

Ray Riordan, the director of San Jose's Office of Emergency Services, said that local officials would follow cues from the federal government. "What we would be responsible for is any of the consequences or impacts related to (an attack)," he said. The city's fire department is currently going through training on responding to radioactive incidents, although it was long planned and wasn't prompted by North Korea's saber rattling, Riordan said.

Just because the Bay Area is on the West Coast doesn't mean we're a top target. "People are in total denial about how far those missiles go," Lewis said. It's likely that most of the U.S. mainland, including New York and Los Angeles, are in range of the regime.

A [map in a 2013 North Korean propaganda](#) photo showed potential targets of Washington, D.C., the Pacific fleet in San Diego, the Pearl Harbor base in Honolulu, and several Air Force bases in middle America — not San Francisco or the Bay Area.

Julie Pullen, a professor at Stevens Institute of Technology who studies civil defense issues, said dramatic headlines about North Korea provided a good chance for officials to spread the word about best practices in the unlikely event of an attack. "I don't think this is an imminent threat," Pullen said, "but it's an opportunity for people to learn about nuclear weapons, particularly younger people who didn't grow up in the Cold War."

Some Bay Area locals, however, are still worried about the possibility of a strike. In the suburb of Hercules — not exactly at the top of Kim Jong Un's hit list — resident Giorgio Cosentino spoke out at his City Council meeting Tuesday night to ask what type of preparations were being made locally.

“We are seeing action at the highest level of government, so we should also be seeing action at the local level, but we are not,” Cosentino said in an email. “There is a disconnect. No one is talking to the citizens about what to do if this goes down tomorrow.”

Contra Costa County Supervisor John Gioia said he thought state and local officials needed to do more to prepare for the North Korean threat. “Having grown up in a generation not faced with the prospect of these types of threats, it’s new territory for us,” Gioia said.