

# Study: Thousands Would Die in an Attack on Iran's Nuclear Sites

By Golnaz Esfandiari

*Estimating the human toll of airstrikes*



Iranian students form a human chain around Isfahan's uranium enrichment facility to show their support for Iran's nuclear program. (Morteza Nikoubazi/Reuters)

Maryam sometimes thinks about what would happen if there were a military attack on her city's uranium-conversion facility. The plant lies on the outskirts of Isfahan, the historical city that she calls home. "It scares me, of course, even though I don't have any information about the likely impact on people like us," says the 55-year-old.

Now a [new report](#) is trying to answer that question. Experts believe the Isfahan uranium-conversion facility -- which contains an estimated 371 metric tons of uranium hexafluoride -- is one of the four Iranian sites likely to be targeted if Israel or the United States were to decide to take military action in an effort to delay or cripple Iran's nuclear program. The University of Utah's Hinckley Institute of Politics and the NGO Omid for Iran teamed up to produce a study that concludes that a military strike on the facility could have tragic consequences for Maryam and thousands of other residents of her centrally located city, which has a population of 2 million.

It's unlikely that Maryam would die as an immediate result of such a bomb attack. But she could be among the estimated up-to-70,000 people who would be killed or injured after being exposed to toxic plumes released as the result of such strikes. They would reach the city within an hour. Such a scenario would mean that the people of Isfahan could experience a catastrophe similar to the gas leak in Bhopal

or the nuclear meltdown at Chornobyl, says Khosrow Semnani, the author of the report, which is titled, "The Ayatollah's Nuclear Gamble."

"People's skin could be burnt [when coming in contact with the plumes], they could become blind, their lung could be destroyed, their kidneys could be damaged, and in the future they could face other health problems such as skin cancer and [other forms] of cancer," Semnani says. The report analyzed the impact of preemptive conventional strikes on four key nuclear sites: Isfahan's uranium conversion facility; Natanz's fuel-enrichment plant; Arak's heavy-water plant; and Bushehr's nuclear power plant. Workers at those sites -- who include scientists, workers, support staff, and soldiers -- would be among the first victims of a bombing campaign. The report estimates that the casualty rate at the sites would be close to 100 percent.

"According to our estimates, the number of casualties of the bombing of the four sites would be about 5,000 people," Semnani says. "If the bombing would include more than those four sites, then the immediate casualty would be up to 10,000 people." The report warns that the grim scenario could be magnified by the lack of readiness on the part of Iranian authorities, who have a poor record of disaster management and who lack the capacity to handle deadly radioactive fallout in the aftermath of a strike on its nuclear sites.

Afshin Molavi, an Iran expert and a senior fellow at the New America Foundation, says the study fills a gaping vacuum in Western discussions about military strikes on Iran, which often ignore the human cost of such actions. "People talk very callously about the prospect of military strikes, and they frame it in the geopolitical fallout, the geo-economic fallout, what will happen to the oil price and all of these issues. But nobody has ever talked about the humanitarian consequences of a military strike on Iran," Molavi says. "Those humanitarian consequences are grave, so I think this report fills a very important vacuum. It needs to be read by policy makers at the highest levels in Western governments; it needs to be read in Israel; it needs to be read all over the world."

Greg Thielman, a former senior U.S. intelligence official and an expert with the Arms Control Association, says the study is a worthwhile exploration that gives color to "a very dry and bloodless discussion of what attacking Iran would be." He does say, however, that he doesn't think the United States or Israel would attack Bushehr, because it's not of critical concern to the International Atomic Energy Agency (IAEA) -- the UN nuclear watchdog that has access to the site. "I would note also that it is against the Geneva Convention to attack civilian nuclear power plants," Thielman says, "and that's another reason why I think the U.S. and Israel would think twice about it, because it is clearly contrary to international law to do that."

David Albright, a former UN weapons inspector and the president of the Institute for Science and International Security (ISIS) in Washington, says he doesn't believe that a military attack on Bushehr is likely. He says the number of casualties would depend on how the attacks are planned and conducted: "If they attack all the [conversion lines] -- you have six in Isfahan and you'd expect more -- they may not attack and they choose to cripple the site without trying to destroy the uranium hexafluoride."

The human cost of a strike on Iran's nuclear facilities hasn't been ignored by Western analysts alone. It's also not a topic of discussion in Iran, where the state media largely focus on how the country would retaliate in case of attack.

"Ninety-nine percent of these people are not even aware of the horrifying scenario" that could await them, Semnani says.

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This article available online at:

<http://www.theatlantic.com/international/archive/2012/10/study-thousands-would-die-in-an-attack-on-irans-nuclear-sites/263165/>

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