

Nuclear Reactors as Terrorist Targets

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In the recent soul-searching over how best to protect ourselves against further terrorist attacks, much attention has been focused on the potential vulnerability of the nation's 103 nuclear power plants, including the two reactors at Indian Point in Buchanan, N.Y., some 35 miles north of Times Square along the Hudson River. A group of environmentalists and public officials has petitioned the Nuclear Regulatory Commission to close down Indian Point until it can be made safe from terrorist attack. That seems an overreaction. A shutdown would deprive New Yorkers of a valuable source of electricity even as energy companies are scrambling to build more power plants to meet projected demand. Whatever threat is posed by terrorists can more sensibly be addressed by enhancing the plant's security measures.

Nuclear plants are built so robustly that they would seem to present a difficult target for terrorists. Their containment domes have walls three to six feet thick made of concrete reinforced with embedded steel bars and a half-inch steel liner. The reactor itself, tucked way down inside the dome, is protected by another thick slab of reinforced concrete. In one dramatic test years ago, a fighter jet was catapulted into a mock containing wall at nearly 500 miles per hour. The plane disintegrated into a pile of dust; the wall suffered a two-inch scratch.

Nobody knows what would happen if a much bigger jumbo jet loaded with fuel dived into a containment dome. Engineers at Entergy, the company that operates Indian Point, feel confident that their dome could withstand even that level of force. But some experts say a jumbo jet, or at least its engines, might break through the dome and ignite a fire or explosion that could cause enough disruption to start the reactor toward meltdown and release of radioactivity into the atmosphere. Nuclear regulators will need to assess the likelihood of that sequence and find ways to mitigate the consequences.

A far more vulnerable target is presented by the pools where spent fuel rods are stored after they have been used in the reactors. The pools have thick sides to prevent water from leaking even in a large earthquake but little protection overhead. A plane could theoretically plunge into the building and trigger events that could drain the pools and ignite a fire, which could spread radioactivity into the environment. Fortunately, the pool structures are relatively small and so would be hard to target from the air. Even if a leak were triggered, plant employees might have time to replace any water that drained out.

Beyond any threat from the air lies the possibility of terrorist assaults over land or from the river. In recent months, Entergy has beefed up its own security forces, National Guard troops and state police have been assigned to the plant, and Coast Guard vessels and military planes have included Indian Point in the areas they patrol protectively. James Kallstrom, the former F.B.I. official who now heads Gov. George Pataki's Office of Public Security, has declared Indian Point "an extremely safe place," based on a recent Federal Bureau of Investigation and state evaluation. He considers it far more secure than any other part of the civilian infrastructure.

That is undoubtedly true. Terrorists would have a far easier time igniting a conflagration at a toxic chemical plant or refinery than at a nuclear plant. But it is also true that neither the Nuclear Regulatory Commission nor the nuclear industry has designed its structures

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or its security tactics to cope with terrorist attacks of the scale and sophistication of those used against the World Trade Center and the Pentagon. Whether terrorists would elect to go after any nuclear plants is uncertain. But the commission needs to make sure that, should they try, the effort would almost certainly fail.

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