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Assessing Threat At Nuclear Plants

Experts find terror vulnerabilities

By Thomas Frank
WASHINGTON BUREAU

February 3, 2002

Washington - Packed with highly radioactive pellets, thousands of pencil-thin poles stand in three enclosed pools 12 miles north of Montauk on the Connecticut coast.

More than 100 similar pools brim with radiation across the country, including three in Westchester, and they store a combined total of 40,000 tons of used nuclear fuel. "It's the single largest concentration of radioactivity on the planet," said Robert Alvarez, a former Energy Department adviser on national security who warns that the pools now represent something else: an inviting target for terrorists flying small planes that could smash through the metal roofs covering many of the pools.

President George W. Bush's warning Tuesday that "diagrams of American nuclear power plants" were found in Afghanistan - and that "our war against terror is only beginning" - has given new life to smoldering fears of a terrorist attack on one of the country's 103 nuclear power plants.

"The vulnerability is that the security defenses are basically 1960s era and the threat level is now 21st century," said David Lochbaum, a nuclear safety engineer at the Union of Concerned Scientists, an environmental group. "No one thought of a water or airborne attack. Sept. 11 shows that's not a good assumption."

Federal regulations, for example, do not require nuclear plants to withstand a jetliner crash or to prepare for an attack by more than three outsiders and one inside accomplice.

"They've been looking at a Homer Simpson scenario rather than a bin Laden scenario," Alvarez said.

Richard Meserve, chairman of the Nuclear Regulatory Commission, said in a Jan. 17 speech, "There have been no specific credible threats of a terrorist attack on nuclear power plants." However, many nuclear experts and officials say a large terrorist group could take over a nuclear power plant and trigger a meltdown or wreck the fuel-storage system to unleash radioactivity. Tests of nuclear plant security - which the cash-starved NRC conducts just once every eight years - have revealed "significant weakness" 47 percent of the time, according to the NRC.

Fears about a hijacked jet crashing into a nuclear plant were given credence by an October 2000 NRC report showing that roughly half the commercial airplanes in use could penetrate concrete walls surrounding fuel-storage pools.



Nuclear plants have been on their highest state of alert since Sept. 11, as the NRC undertakes a "top-to-bottom review" of security regulations. The Coast Guard is barring boats from approaching nuclear plants, though it has curbed patrols of the plants. National Guard troops, omnipresent at nuclear plants throughout the fall, also have been pulled back, though at plants such as Millstone, on the Connecticut coast north of Montauk, the private security force has been increased.

The NRC and nuclear plant owners are resisting more dramatic measures, such as making security guards federal employees, which they say would hamper security and overwhelm regulators. Nuclear plants, they say, are safe.






Layers of steel and concrete measuring up to 14 feet thick protect the reactor core, where uranium is split. Armed guards are positioned throughout each plant. And security systems have backups and redundancies to prevent malfunction and intrusion.

"There are a lot of places that have minimal security as opposed to the high level of security that they have at nuclear stations," said Texas A&M University nuclear engineering professor John Poston, a member of the National Council on Radiation Protection and Measurements.

But the effects of a nuclear-plant attack could be devastating. A 1997 Brookhaven National Lab study said radiation released by a fire in a fuel-storage pool could cause \$59 billion in damages, render an area nearly the size of Hempstead and North Hempstead towns uninhabitable and cause up to 28,000 cancer fatalities, though it is not clear over what time period.

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Even nuclear officials concede that fuel pools are not so fortified. "I'm not going to say they have invulnerable roofs because that wouldn't be the case," said Pete Hyde, a spokesman for Millstone owner Dominion Resources Inc. of Virginia. But he said the buildings are very small targets for an air attack.

The New York area faces a particularly severe threat, local officials say, because the Indian Point nuclear complex - 24 miles from New York City in Westchester - is located near more people than any other nuclear reactor in the country.

"The chances of either a terrorist attack or accident at Indian Point are small, but the consequences are awful and enormous," said Assemb. Richard Brodsky (D-Hartsdale), who, since Sept. 11, has joined numerous officials and citizens calling for a temporary plant shutdown until safety risks are evaluated.

Although New York State public security director James Kallstrom said in December that the plant is "extremely safe," Brodsky and others worry that the evacuation plan, approved Friday by Gov. George Pataki, could leave children stranded at schools and motorists jammed in traffic.

Larry Gottlieb, a spokesman for Indian Point owner Entergy Nuclear Northeast, said those scenarios would not happen, but Brodsky vowed to fight on as the plan goes before the Federal Emergency Management Agency: "This has turned from an anti-nuclear-activist issue to a soccer-mom issue."

Long Island anti-nuclear activists are challenging as unsafe a plan by Dominion Resources to more than double the amount of spent nuclear fuel stored in one of three nuclear-fuel pools at the Millstone complex.

That situation is becoming increasingly common as plants across the country pack more and more rods into pools that were originally envisioned as temporary facilities where the 13-foot-long zirconium tubes could cool off for a few years under 30 feet of water. The federal government has faced extraordinary delays in a 20-year-old plan to build a central storage site and now hopes to have a facility at Yucca Mountain in Nevada open by 2010 at the earliest.

"The pools are now jammed wall to wall with spent fuel in a high-density configuration," which increases radiation in the pool, said Gordon Johnson, a Cambridge, Mass., nuclear expert who has helped anti-nuclear groups. "If a pool lost water, it's more likely it would catch fire."

In its legal challenge, an East Hampton-based group called Standing for Truth About Radiation says the NRC should no longer ignore the possibility of a terrorist attack in deciding whether expansions or new nuclear plants will harm the environment.

"The NRC's long-standing position has been that since it's not possible to quantify the probability of a terrorist attack, it's not necessary to examine the consequences of an attack or to mitigate the consequences," said STAR attorney Diane Curran of Washington.

Although the NRC has vowed to review its safety requirements, skeptics in Congress, including Sen. Hillary Rodham Clinton (D-N.Y.), are pushing legislation that would require regulators to set new standards that take into account the Sept. 11 attacks.

Heightened nuclear plant security could cost plant operators millions of dollars, which they might have difficulty finding or reluctance paying in a world of deregulated electricity markets, experts said. The alternative is for the federal government to continue to assume responsibility for protecting against major attacks. But that strategy has risks.

"They assume the CIA and FBI would be able to figure out if a plant was being targeted, and then the National Guard would be dispatched," said Lochbaum of the Union of Concerned Scientists. "But what Sept. 11 showed us is we may not have advanced warning."

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