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HEADLINE: NRC: Jets can pierce reactors

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Vulnerability study of nuclear plants was open to public

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The Nuclear Regulatory Commission has known for nearly 20 years that a large commercial jet could crash through the containment buildings of commercial nuclear power plants, information that was not removed from a public reading room at the NRC until after Sept. 11.

The NRC recently removed from the room a 119-page report commissioned for the government that identified the vulnerabilities of nuclear reactors and included an analysis that found if a jet crashed into a concrete containment dome at more than 460 mph, the explosion of fuel and fuel vapor could overwhelm shields inside that are designed to protect the reactor.

The 1982 study was conducted at the Argonne National Laboratory in Illinois for the U.S. Department of Energy and the NRC. It remained available to the public, despite warnings dating to 1994 that terrorists considered striking a U.S. nuclear plant.

Since two jetliners crashed into the World Trade Center on Sept. 11, the owner of the nuclear power plants at Indian Point in Buchanan has maintained that the plants could withstand an aerial attack and that they had the security measures in place to protect against such an assault. The NRC initially supported that contention, but later acknowledged that it could not rule out the possibility that a suicide hijacker could seriously damage a plant and result in the release of some radioactivity.

A spokesman for Entergy, which owns the 27-year-old nuclear plants at Indian Point, said yesterday that he had not read the Argonne report and was "somewhat uncomfortable commenting on it."

Spokesman Larry Gottleib said, however, that people should not focus on the possible destruction of the containment buildings at Indian Point, since "there are multiple levels of protection on the site."

"There are multiple layers of protection of the core," Gottleib said. "You have to look at the whole puzzle."

Entergy officials have declined to specify what security measures are in place at Indian Point, citing security concerns. The plants are protected by the Coast Guard, the National Guard, local police and private security guards.

Last week, a "credible threat" against the Three Mile Island nuclear power plant in Pennsylvania prompted federal officials to put the plant on a high state of alert and shut down airspace around it. Harrisburg International Airport and Lancaster Airport were closed for four hours while military aircraft patrolled the local skies, and the FBI and state police watched the plant.

Information in the Argonne report was disclosed for the first time yesterday by the National Whistleblowers Center in Washington, D.C. The organization filed a petition with the NRC asking for the installation of anti-aircraft weapons at every nuclear plant site in the country to protect reactor containment buildings and the less-protected spent fuel pools against air attacks.

"The most damning part of the report is very visual," said Michael Kohn, the organization's general counsel. "It shows how the missile penetrates through the concrete. At 466 mph, the full impact load of the plane is passing on to impact the structure."

NRC spokesman Victor Dricks said yesterday that precautions against plane crashes were not taken before Sept. 11 because "it was never considered credible that suicidal terrorists would hijack a large commercial airliner and deliberately crash it into a nuclear power plant."

He would not comment on the report, saying it had been withdrawn for security reasons.

The report was based on what was then considered a large commercial jet, the Boeing 707-320, which is about 153 feet long and weighs 336,000 pounds. In contrast, the Boeing 767-300, the type of craft that crashed into the World Trade Center towers, is 180 feet long and weighs 412,000 pounds. It carries 23,980 gallons of jet fuel.

Entergy's Gottlieb said a test at the Scandia Laboratories of an F-4 fighter jet crashing into a concrete wall indicated that nuclear reactors' containment buildings could withstand a commercial jet crash. Entergy representatives have been showing videos of the test to community groups to prove that Indian Point is safe from aerial assault. Westchester County Executive Andrew Spano has been citing the same test as an indication that the plants are safe.

But the Scandia test does not, in fact, address the safety of a nuclear plant's containment wall from an aerial assault. The 1989 test, reported in Science News Magazine, was conducted for a Japanese firm testing the accuracy of computer programs simulating high speed jet crashes.

The F-4 weighed 42,000 pounds - about one-tenth the mass of a 767 - had no fuel, and crashed into a concrete wall 12 feet thick and weighing 1 million pounds. A containment building is about 5 feet at the base, tapering to only about 18 inches at the dome. The Argonne study found the dome to be the most likely impact point in a crash.

The report details not only the speed at which the concrete containment buildings would crumble, but adds that the NRC was wrong to ignore the threat from burning fuel. It says that the explosion of only about 500 pounds of fuel, or about 83 gallons, "will be equivalent to the detonation of approximately 1,000 pounds of TNT."

In their petition to the NRC, the Whistleblowers charged that "because all nuclear power plants cannot protect the public from the release of radiological hazards from a plane crash, the NRC improperly permitted nuclear plants to continue to operate under the assumption that there will never be a terrorist airborne assault on a nuclear power facility."

"This assumption is foolhardy and must end," the petition said.

The group's petition also calls for the creation of no-fly zones over all nuclear reactors. There are no restrictions over nuclear facilities, Federal Aviation Administration spokesman Bill Shuman said.

The Associated Press contributed information for this report.