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'Nuke plants avoid costly new edicts

But critics say lack of stronger policy opens reactors to terrorists

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By JIM MORRIS / The Dallas Morning News

WASHINGTON — The nuclear power industry seems to have escaped budget-busting new security guidelines, but critics say the move still leaves reactors vulnerable to terrorist attacks.

Last week, the Nuclear Regulatory Commission completed a much-anticipated revision of the hypothetical terrorist threat against which nuclear plants must defend.

Details of the document, driven by the Sept. 11, 2001, terrorist attacks, are secret. By all appearances, however, industry predictions of costly new requirements were unfounded.

Lynnette Hendricks, director of licensing for the Nuclear Energy Institute, a trade group, said the NRC backed away from "ridiculous" security edicts that had been discussed privately in recent months. Not long ago, the financially frail industry said that its 65 sites might have to spend an average of \$30 million apiece over the next two years to meet what industry officials characterized as unreasonable standards.

Having seen the classified document — known as the design basis threat — Ms. Hendricks said, "I don't think it will be nearly that much. What they put out is fairly reasonable."

Not everyone is satisfied. Peter Stockton, a former congressional investigator and Department of Energy consultant who has followed the NRC security reassessment closely, said the agency apparently succumbed to industry and congressional pressure and tailored the design basis threat to what nuclear utilities could handle without absorbing huge costs.

"They did it totally backwards," said Mr. Stockton, now a senior investigator with the Project On Government Oversight, a watchdog group. "You figure out what a credible threat is to a nuclear power plant, and then you size your guard force to meet that threat."

Mr. Stockton and other NRC critics said the design basis threat in existence before Sept. 11 was unrealistic in an age of escalating terror. Based on their understanding of the new one, they said, nuclear power plants remain vulnerable to large groups of well-armed, well-organized attackers.

Pre-Sept. 11

The pre-Sept. 11 hypothesis was that, at worst, a few poorly trained terrorists would attack a site such as Comanche Peak, southwest of Dallas, or South

Texas, southwest of Houston, with low-tech weapons. Ten years of force-on-force exercises – pitting teams of mock defenders against teams of mock terrorists – showed that about half of the plants couldn't stop even these rudimentary sorts of assaults, Mr. Stockton said.

The industry says that its performance was never that bad and that it has shored up its already formidable defenses in the last 19 months. The Nuclear Energy Institute says that each site has added an average of 29 guards, made \$2 million in capital improvements and seen an annual increase of \$2.3 million in operating expenses as a result of interim security requirements imposed by the NRC.

Until recently, it appeared the agency would demand much more. This propelled the industry and its allies into action.

In testimony before a House subcommittee in March, Lance Terry, principal nuclear officer for Dallas-based TXU, which operates Comanche Peak, warned that the NRC might force utilities to redesign plants so they could withstand heavier weaponry. This, the former Navy commander said, would be like "converting a cruiser to a battleship."

Mr. Terry, who chairs the Nuclear Energy Institute's Security Working Group, estimated that it would cost the industry \$2 billion over the next two years to make the changes being discussed at the time. "We think that we have cooperatively and responsibly moved to our limits," he said.

In letters to the NRC, three Republican senators came to the industry's defense. "It is important that we recognize the efforts of the industry, and that we do not unnecessarily undermine its ability to provide low-cost power for [its] customers," wrote Sen. Chuck Hagel of Nebraska.

The debate over nuclear security has been conducted largely out of public view, at the NRC's insistence. Richard Rosano, communications team leader in the agency's Office of Nuclear Security and Incident Response, would not comment on any aspect of the new design basis threat. Nor would he discuss what role, if any, industry objections played in the shaping of the finished product.

Mr. Rosano did say, "This is a strong move into the future that takes into account a lot of the things we have learned in the months following the Sept. 11 terrorist attacks."

The months of discord that went into the development of the document came down to this: How much protection against terrorism should private industry be forced to provide, and at what point should the government step in? Feelings on both sides of the issue are strong.

Said U.S. Rep. Joe Barton, R-Ennis: "We can't ask TXU to put up Patriot anti-missile batteries."

Countered Rep. Edward Markey, D-Mass.: "Taxpayers should not have to bear the burden of securing energy facilities that can recoup the cost by increasing the price of the fuel they sell."

Before Sept. 11, it was assumed that a plant would be attacked by no more than three terrorists, with help from an insider, and that the terrorists would enter the property as a single unit.

Training exercises

In 1991, the NRC began testing plants under what was known as the Operational Safeguards Response Evaluation program. Exercises were conducted at all 65 nuclear sites, with 103 reactors, over the next decade; some were tested twice.

Each utility was graded on its ability to keep mock terrorists from reaching

the control room or other critical areas of the plant, where they could cut off coolant to the reactor and possibly trigger a meltdown.

In about half of the exercises, the NRC identified "serious problems that had to be fixed," said David Lochbaum, a nuclear safety engineer with the Union of Concerned Scientists. "That was a fairly constant performance rate. There was no evidence of a learning curve."

Mr. Rosano, who directed the NRC's testing program from 1997 to 2001, said it would be misleading to suggest that there was a nearly 50 percent failure rate. Rather, he said, agency evaluators logged negative findings – some quite minor – at 47 percent of the plants tested. Significant flaws were noted at 15 percent, he said.

"The reason we conduct these force-on-force exercises is precisely to find these problems," Mr. Rosano said. "They're not pass-fail."

Two years into the program, in February 1993, the Three Mile Island plant in Pennsylvania was confronted with a real threat: a former mental patient who drove a station wagon through a fence during a shift change, rammed a door leading to the turbine building and hid inside for four hours before being apprehended. The man was unarmed and carried no explosives, and none of the plant's vital areas was affected. Some, however, were unsettled by the intruder's foray and the amount of time it took to find him.

Security concerns

A decade after that incident, Mr. Lochbaum harbors deep concerns about security. He worries, for example, about assaults on spent fuel pools, packed tightly with used but radioactive fuel assemblies. At about a third of the nation's reactors – not at Comanche Peak or South Texas – these pools are above ground, making them especially susceptible to attack from the air, he said.

Mr. Lochbaum, who worked in the power industry for 17 years, also frets about dry-cask fuel storage facilities – holding areas for waste encased in concrete and lead casks. "They're fairly easy to get at," he said. "A lot of the time you don't even have to cross the fence boundary to get a line of sight" – an appealing scenario for a terrorist armed with a rocket-propelled grenade.

Department of Energy consultant Ron Timm also remains skeptical.

"The power plants quite literally get the snot kicked out of them" by adversaries in the NRC exercises, said Mr. Timm, president of RETA Security Inc. of Lemont, Ill.

In Mr. Timm's view, "the DOE is probably two generations ahead of where the NRC is today" in field testing and computer modeling of security risks. In DOE exercises, for example, mock combatants carry rifles fitted with laser transmitters and wear sensor-equipped vests and headbands. A successful "shot" produces a piercing tone.

For NRC exercises, suspended after Sept. 11, the faux weapon of choice was a plastic gun that makes a chirping noise.

Under the NRC program, a site was tested, on average, every eight years. Utilities provided defenders and adversaries. The agency selected targets and gave tactical advice to the bogus attackers.

In April 2002, the NRC's David Orrick told a House subcommittee that all plants had been given ample time to prepare for the tests but that almost half "still had a weakness in armed response." The good news, he said, was that the utilities that did poorly seemed to learn from their mistakes.

Guards' view

In a September report, the Project On Government Oversight quoted more than a dozen guards who took a dim view of security at their plants. The guards and the plants were not identified.

One officer, who worked at a reactor being decommissioned, said that alarms had been removed from fences and that the armed response force had been gutted. He estimated that it would take terrorists only 20 seconds to get through the fence and reach the spent fuel pool.

Another said some guards slept at posts during the night shift. A third predicted that half the guard force would flee if attacked. Many complained of low wages, long hours and meager benefits.

Mr. Rosano said the NRC has tried to address such problems. On the same day it came out with the new design basis threat, the agency issued orders limiting guards' working hours and requiring enhanced training. NRC-run exercises will resume at some point, possibly next year.

Comanche Peak was last tested by the NRC in 1999, Mr. Terry said. Although he would not disclose specific results, he said, "we did very well."

Mr. Terry contends that nuclear plants are among the safest – if not the safest – industrial installations in the United States. The industry-funded Electric Power Research Institute, for example, recently concluded that the crash of a Boeing 767 into a reactor containment building, spent fuel pool or dry-cask storage facility would not cause a radiation release.

"Sure, we'd have a problem," Mr. Terry said. "We'd have a catastrophe just like you would have a catastrophe if an airplane crashed out in the middle of a field, and we would have to combat that, but there would not be a penetration of the containment or the spent fuel pool or the dry-cask storage, based on the analysis that the industry did."

Nuclear plants, Mr. Terry asserted, "are considered by everyone that looks at them to be a hardened target, and that includes the FBI. It includes state police. It includes congressmen."