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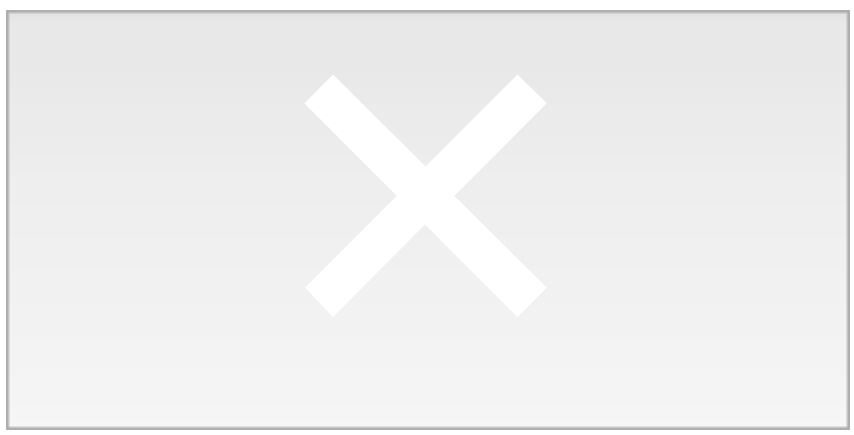

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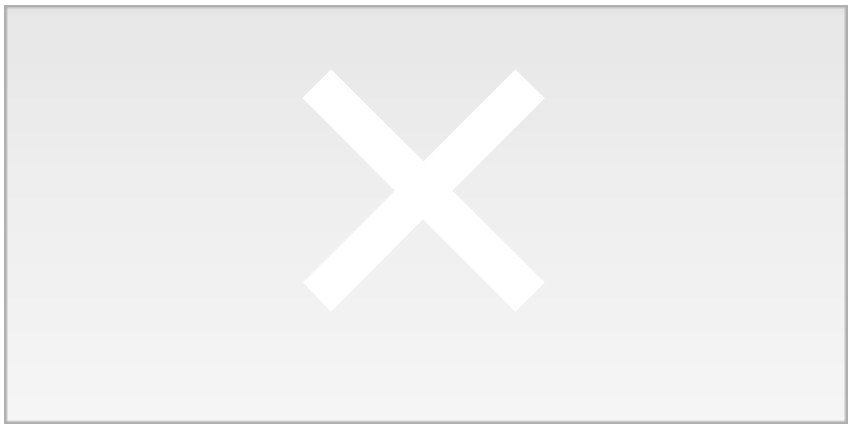

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The Civic Report

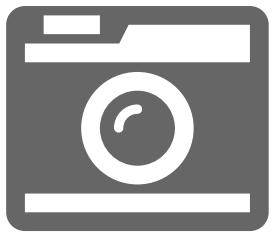
A Meltdown in Nuclear Security

A commando raid on a nuclear power plant seems the stuff of Hollywood. So why are nuclear security experts so worried?

By Alan Neuhauser Staff WriterSept. 20, 2019, at 6:00 a.m.

A Meltdown in Nuclear Security

A view of the nuclear power plant on Three Mile Island, in Middletown, Pennsylvania on March 26,



2019 (Andrew Caballero-Reynolds/AFP/Getty Images)

It ranks among the worst-case scenarios for a nuclear power plant: an all-out assault or stealth infiltration by well-trained, heavily armed attackers bent on triggering a nuclear blast, sparking a nuclear meltdown or stealing radioactive material.

For nearly two decades, the nation's nuclear power plants have been required by federal law to prepare for such a nightmare: At every commercial nuclear plant, every three years, security guards take on a simulated attack by hired commandos in so-called "force-on-force" drills. And every year, at least one U.S. nuclear plant flunks the simulation, the "attackers" damaging a reactor core and potentially triggering a fake Chernobyl – a failure rate of 5 percent.

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In spite of that track record, public documents and testimony show that the Nuclear Regulatory Commission, the federal agency responsible for ensuring the safety and security of the nation's fleet of commercial nuclear reactors, is now steadily rolling back the standards meant to prevent the doomsday scenario the drills are designed to simulate.

Under pressure from a cash-strapped nuclear energy industry increasingly eager to slash costs, the commission in a little-noticed vote in October 2018 halved the number of force-on-force exercises conducted at each plant every cycle. Four months later, it announced it would overhaul how the exercises are evaluated to ensure that no plant would ever receive more than the mildest rebuke from regulators – even when the commandos set off a simulated nuclear disaster that, if real, would render vast swaths of the U.S. uninhabitable.

Later this year, the NRC is expected to greenlight a proposal that will allow nuclear plants – which currently must be able to fend off an attack alone – to instead begin depending on local and state law enforcement, whose training, equipment and response times may leave them ill-prepared to respond to a military-grade assault.

The moves have inflamed open dissent within the commission, which has been riven in recent years by internecine conflict between Republican and Democratic commissioners.

"I know how easy it is to cause a Fukushima-scale meltdown ... You can't afford to be wrong once."

"The NRC staff argues that this approach 'would increase the efficiency of the FOF inspection program,"" Commissioner Jeff Baran, an Obama administration appointee, wrote in an agency document in October. "NRC would really just be doing less."

The commissioners in the NRC's majority, as well as senior staff members and the nuclear power industry's main trade group, maintain that the changes reflect the improved state of security at the nation's fleet of commercial nuclear plants – and, to some degree, amount to a long-overdue correction to security excesses prompted by the Sept. 11 terror attacks. The force-on-force exercises, they contend, are merely one facet of a rigorous security regime.

"It's just one out of 10 security inspections that we do, and it's the totality of those inspections that we do that have us verifying that licensees are operating their plants in a secure way," says Marissa Bailey, director of the Division of Security Operations at the NRC.

Nuclear security experts, consultants, law enforcement veterans and former NRC commissioners – several of whom spoke with U.S. News on condition of anonymity in order to address the issue candidly – are nothing short of alarmed. They openly question whether top regulators at the NRC, ceaselessly lobbied by an industry strapped for cash, have fallen prey to valuing quarterly earnings, lucrative contracts and potential plum job opportunities over day-to-day security.

A longtime nuclear security expert minced no words about the potential consequences:

"I know how easy it is to cause a Fukushima-scale meltdown, radiation release or worse. And the timelines are very short. You don't have much room to maneuver if you misjudge what the threat is," says Ed Lyman, senior scientist in the global security program and acting director of the nuclear safety project at the Union of Concerned Scientists. "You can't afford to be wrong once."

'No One Likes Security'

Force-on-force exercises, a mix of live-action role playing and military-grade laser tag, are not unique to the nuclear sector – they're used to test military bases, and police departments engage in a version of them in active-shooter drills. For obvious reasons, they remain cloaked in secrecy.

Some details about the nuclear drills, though, are publicly available: The attacking force is expected to deploy a range of tactics, from disabling alarm systems to using automatic weapons and silencers, attacking one or multiple entry points, employing land and water vehicles, and using "incapacitating agents" and explosives. The types of attacks are explicitly outlined in NRC regulations.

"It's a big, big thing that these folks have to go through under the microscope every three years," says Justin Corey, a longtime nuclear security consultant whose work has included advising plants on training and defense measures and who has participated in force-on-force exercises as an adversary.

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The industry has long lobbied to either eliminate the drills or, more recently, conduct them internally, with regulators relegated to the role of passive observer rather than planning and directing each exercise.

"The industry is under economic strain, so they're looking to cut wherever they possibly can, and this is one place that they've been harping on for a long time to cut," a former NRC chairman says.

The drills are expensive and inconvenient, requiring preparation that can stretch as long as six weeks. Failing an exercise, meanwhile, can prompt millions of dollars in unplanned security upgrades – not to mention, if made public, hit the parent company's stock price. All the while, maintaining a security force – with the requisite training and equipment – is no small expense, one that can seem hard to justify when the threat, though dire, can appear utterly remote.

"No one likes security," Corey says. "You got all these people and all these positions and all these guns and all this money, and nothing happens. 'Did that guy waste his money on me, or did I do my job?' – that's security in a nutshell."

Such an assault may seem the stuff of Hollywood. But intelligence assessments show that despite a spate of so-called "lone wolf" incidents in the U.S. and overseas, groups like al-Qaida and domestic terrorists in the U.S. remain as determined as ever to launch spectacular attacks. U.S. nuclear plants are at the top of the target list, experts say.

"Certainly there was a period of time when it looked like, 'Well, how great is the threat to critical infrastructure from catastrophic attacks, given the spate of lone wolf attacks?'" Lyman says. "But it's not an either-or."

As recently as 2016, authorities in Belgium warned that Islamic State group operatives were planning to attack nuclear plants. The gunman who opened fire that year at a gay nightclub in Orlando worked for a contractor as a security guard at a nuclear plant in the U.S. Intelligence officials have fingered Russia in repeated cyberattacks on nuclear power plants, which could be used in conjunction with an armed infiltration.

But serious breaches have occurred even without the help of rogue insiders, heavy weaponry or foreign adversaries. With just a pair of bolt-cutters, a nun and a pair of pacifist activists in 2012 broke into a nuclear weapons complex on federal land that supposedly had higher security standards than civilian nuclear energy sites. They did little more than spray paint protest slogans, but some 30 minutes passed before guards realized a breach had occurred. Yet despite sparking a flurry of headlines and investigations, the incident prompted a collective shrug within the civilian nuclear sector, surprising security experts and contractors.

"They had very similar defenses: exclusion zones, cameras, and I thought right then and there you're going to have a big change in people's attitudes with what these sites need to be secured with. And, to my dismay, no one cared," says a former nuclear security consultant whose work included leading the adversary forces. "It just fell to the wayside."

When the inspection regime was launched in 1991, plants faced four simulated attacks by commandos over four days, every seven years. In 2003, in the wake of 9/11, the NRC adjusted the cycle to three drills every three years. In recent years, though, the commission has loosened the standards for the force-on-force drills, including reducing the number of drills to two in 2014. That same year, the commission briefly floated a plan to slash the number to one before abruptly withdrawing it months later.

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That final proposal was revived last October: The commission voted 4-1 to allow plants to engage in just a single force-on-force drill and, if they pass, undergo a less intensive "enhanced inspection" rather than a second drill.

"Doing three nights is tough: You have a chance to attack at three different spots. Now they have a chance to put their strong foot forward," a security contractor says.

NRC Chairman Kristine Svinicki, in comments accompanying her vote to ease the inspection regime, insisted that the enhanced inspection, compared to a second force-on-force drill, "would allow the NRC to better assess a licensee's understanding" of how nuclear plants can repel attacks. Another commissioner touted an "increase in efficiency" in the force-on-force program.

Commissioner Baran, the lone dissenting vote, later spoke out at a Senate committee hearing in April.

"We should not allow licensees to inspect themselves," he testified. "Doing so would be fundamentally inconsistent with our role as an independent nuclear safety regulator."

Writing in a comment accompanying his vote opposing the change, he insisted that "efficiency" – or, put more bluntly, companies' bottom lines – appeared to be the only consideration that mattered to regulators.

"Going from two NRC-conducted FOF exercises to one would provide no security benefits," Baran wrote. Rather, one of the only benefits "would be to reduce the costs of conducting the exercises."

Monkeying With the Exercises

Security experts have long suspected that the urgency of the exercises – heightened in the wake of 9/11 – has given way to complacency in recent years, rendering the drill little more than an expensive, heavily armed dog-and-pony show, as multiple experts put it. Often in recent times, the commandos were ordered to attack not where a facility was most vulnerable but rather where it was best prepared to defend itself, former contractors say.

"You don't necessarily attack the weakest spot," the former nuclear consultant says. "It sometimes feels like, 'Well, we're just running up Normandy Beach.' Everything is best-case scenario, not it's worst-case scenario."

By cutting the number of NRC-conducted exercises from two to one, though, regulators granted even greater deference to the industry – including an enormous, little noticed concession: the opportunity to guarantee the outcome, making it all but impossible for any plant to fail.

Nuclear plants were once evaluated along a five-point scale – from "no finding" to green, white, yellow and, most severe, red. Instead, it went in a different, much more industry-friendly, direction: It introduced a two-score binary: "no finding" or "green" – the latter, as suggested by the color, no more than a modest rebuke. The change came with the reduction in drills, with the rationale that a lesser score would only be employed in cases of persistent problems or of multiple issues found across repeated tests. But that system can only be used in full if the NRC conducts at least two force-on-force exercises. By reducing the number of exercises to one, a plant under NRC rules could score no worse than "green." Regulators had suddenly made the old scoring system obsolete.

Under the new system, even if attacking commandos manage to damage the reactor core, an event that can lead to a major release of radiation, the score – as far as regulators, the power plant and the public are concerned – is either pass or, effectively, pass.

"You would think that, if it had been a real attack and it would've led to a Chernobyl, that that should be worse than green," Lyman says. "It's not just monkeying with the exercises themselves but how you evaluate them."

Nuclear power plant owners had long lobbied to weaken the evaluation process, former NRC commissioners say. Senior staff members at the NRC maintain that the exercises and evaluations are rigorous – and that the reduction in their frequency, rather than coming at the request of industry, instead reflects careful and deliberate decision-making – "a continuous improvement," Curtis says, calibrated to match the state of security in the nuclear sector.

"We've been monitoring the threat environment, we've seen licensees significantly enhance their security systems," Bailey says. "And as we were conducting force-on-force inspections, we were also seeing that our licensees were actually performing very well against some very challenging exercises."

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The Nuclear Energy Institute, the sector's main trade association, agreed. "Nuclear plants are held to a very high security standard," spokesman Matthew Wald says. "The NRC is committed to effective, efficient regulation, and that includes making appropriate decisions that consider the presence of relevant resources and the proper interval for exercises and evaluation."

Some contractors and former NRC commissioners share this view. Dale Klein, a commissioner from 2006-2010, and chairman from 2006-2009, allows that while "we can never become complacent, I think the initial response after 9/11 was a little bit of an overreaction."

The exercises exposed serious problems early on: Three years before Sept. 11, attacking commandos were setting off fake nuclear meltdowns at a rate of 50%. Training was inconsistent, and plants struggled to hire and retain skilled and motivated security staff, especially in more isolated areas.

In the nearly two decades since the 2001 terrorist attacks, though, training standards and recruitment rapidly improved, especially with plants now able to draw from a large pool of trained and experienced military veterans, a longtime nuclear security contractor says.

"These things are, by and large, all taken care of," he says, with only the occasional success by the attacking commandos – the sort of event that even the most well-defended site might struggle to repel.

"There's the occasional force-on-force drill that is really challenging and is perhaps something like myself and my folks miss," Corey says. Nuclear plants and their security teams, "can't see everything – but by and large these sites are extremely hardened. ... Security has only gone up."

Some former NRC commissioners maintain that the improvements shouldn't necessarily make a difference in the testing regime.

"I go back to, if it ain't broke, don't fix it. And it's always good to look and see what motivates some of these changes," the former NRC chairman says. After all, "are you really saving that much money? Industry has to keep in mind that one accident, one incident, and they're all gone."

Alan Neuhauser, Staff Writer

Alan Neuhauser covers law enforcement and criminal justice for U.S. News & World Report. He ... Read more

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