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ACTION

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17 January 2025

MEMORANDUM FOR THE PRESIDENT

VIA: *BULLETIN OF THE ATOMIC SCIENTISTS*

FROM: HENRY SOKOLSKI

PURPOSE: ADDRESS THE NEW THREAT OF DRONE-VULNERABLE NUCLEAR REACTORS

Mr. President, in the closing days of your first administration, you issued an executive order spotlighting the growing dangers of drone attacks against America's critical energy infrastructure.<sup>1</sup> Your order asked the Federal Aviation Administration to propose regulations restricting overflights of critical infrastructure. Four years later, large drones overflying nuclear plants both here and abroad demonstrate your request was spot on.

Our government, however, continues to discount the dangers such overflights pose.<sup>2</sup> As for the threats facing the most frightening of civilian targets—nuclear power plants—Washington has been all too silent. While there are many other infrastructure nodes drones can hit, the effects of striking nuclear plants exceed that of almost any other civilian target set. Your second administration urgently needs to address this new threat.

#### BACKGROUND

Your January 2021 order followed an October 2020 Nuclear Regulatory Commission (NRC) report that downplayed the dangers posed by nearly 60 previous drone overflights of US nuclear plants.<sup>3</sup> The commission based its conclusion on a Sandia Laboratory technical analysis that focused on "commercially available" drones.<sup>4</sup> The NRC insisted that attacks

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<sup>1</sup> <https://www.federalregister.gov/documents/2021/01/22/2021-01646/protecting-the-united-states-from-certain-unmanned-aircraft-systems>

<sup>2</sup> <https://www.youtube.com/watch?v=u2WRyEh4f0>

<sup>3</sup> <https://www.nrc.gov/docs/ML2030/ML20300A547.pdf>

<sup>4</sup> <https://www.nrc.gov/docs/ML1930/ML19302E409.pdf>

against reactors with such aircraft posed no risk of inducing a major radiological release.

Since then, drones—far larger than those commercially available to hobbyists—have overflowed US dams, power lines, and nuclear reactors.<sup>5</sup> Recently, the NRC itself has observed a sharp increase in the number of drone sightings over nuclear plants, with drone reports nearly doubling in just one week in December.<sup>6</sup> This led the 10th largest electrical utility company in the United States to urge the Federal Aviation Administration to ban all air traffic over its two nuclear plants after drones were sighted flying over its reactors.<sup>7</sup> Now, Republican governors, including Jeff Landry of Louisiana, are asking you to do something about drones overflying reactors in Louisiana and other states.<sup>8</sup> Overseas, Russian military drones overflowed a German nuclear plant in August, prompting the German government to announce a formal investigation.<sup>9</sup>

#### SECURITY IMPLICATIONS

All of this comes as the United States, South Korea, and Russia are pushing the export and construction of scores of large and small reactors in Eastern Europe, Africa, the Middle East, and East Asia. You and your cabinet should understand that new and existing nuclear plants are potential military targets—now and in the future. Certainly, Russia’s targeting of Ukrainian nuclear reactors and their critical electrical supply systems demonstrates a willingness to attack these dangerous targets.

Meanwhile, several recent war games graphically detailed how China, North Korea, and Russia could use such attacks against Taiwan, Europe, and South Korea to disrupt US military operations and force the evacuation of millions to help achieve their military objectives.<sup>10</sup>

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<sup>5</sup> <https://www.nytimes.com/2024/12/07/nyregion/new-jersey-drones.html>

<sup>6</sup> <https://www.twz.com/news-features/massive-uptick-in-official-drone-sightings-by-nuclear-power-plants>

<sup>7</sup> <https://nypost.com/2024/12/14/us-news/njs-largest-utility-firm-begs-feds-to-shut-down-air-space-over-nuclear-plant-as-mystery-drones-spotted/>

<sup>8</sup> <https://eu.shreveporttimes.com/story/news/2025/01/10/drones-have-been-spotted-over-a-louisiana-nuclear-power-plant/77607680007/>

<sup>9</sup> <https://www.newsweek.com/russia-drones-germany-nato-nuclear-plant-1943384>

<sup>10</sup> <https://www.taipeitimes.com/News/feat/archives/2024/10/21/2003825606;>  
[http://npecstrategygames.org/strategic-distraction-pyongyang-targets-south-koreas-reactors-2/;](http://npecstrategygames.org/strategic-distraction-pyongyang-targets-south-koreas-reactors-2/) <https://npecstrategygames.org/december-2022-reactors-in-war/>

RECOMMENDATIONS

If nuclear power is to have the promising future that you and previous administrations have pledged to promote, your administration needs to address the vulnerability of its reactors to drone attacks.

Your administration should start by refocusing on the concerns you rightly raised in 2021. In specific, within your first 100 days in office, you and your cabinet should:

1. Again ask the Federal Aviation Administration to update its regulations under the FAA Extension, Safety, and Security Act of 2016 (Public Law 114-190).<sup>11</sup> At the very least, the United States needs clearer protocols restricting and countering the use of drones on or over critical infrastructure and other sensitive sites, including nuclear plants, which, if hit, risk a significant release of harmful radiation. Currently, shooting suspect drones down is all but prohibited.
2. Have the Secretary of Defense, the Secretary of Homeland Security, and the Director of National Intelligence assess within 90 days the threat that drone and missile attacks pose to US and allied electrical supply systems, nuclear plants, and other key infrastructure nodes. This report should be published both in classified form—to you, key members of your cabinet, and the national security leadership in the House and Senate—and in unclassified form to the public.
3. Ask the Defense Department, National Nuclear Security Administration, and the Department of Homeland Security to explain how they will either require or provide active and passive defenses for existing and planned US civilian and military nuclear plants here and abroad. This report should also describe how the US government should respond to drone and missile attacks on such plants which, if hit, could release harmful amounts of radiation.
4. Direct the Energy Department and the Federal Aviation Administration to contract JASON (the government's scientific advisory group), to explore what technologies might better detect and counter hostile drone and missile attacks and mitigate the effects of such attacks. These technologies could include hardening nuclear reactors, active and passive defenses, and research on nuclear fuels that might be able to survive advanced

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<sup>11</sup> <https://www.govinfo.gov/link/plaw/114/public/190>

conventional attacks with thermobaric and other advanced conventional explosives.

5. Direct the Energy Department, the Department of Homeland Security, and the Defense Department to devise a program of realistic testing to clarify the military vulnerabilities and safety thresholds of reactors and other nuclear plants against missile and drone attacks.

These steps should guide possible Congressional hearings as well as legislation. You rightly took the lead on these matters in 2021. Now, again, your leadership is needed.

*Henry Sokolski is the executive director of the Nonproliferation Policy Education Center in Arlington, Virginia, and author of China, Russia and the Coming Cool War (2024). He served as deputy for nonproliferation policy in the Office of the US Secretary of Defense during the George H.W. Bush administration.*