

The Trump administration has secretly rewritten nuclear safety rules

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The Trump administration has overhauled a set of nuclear safety directives and shared them with the companies it is charged with regulating, without making the new rules available to the public, according to documents obtained exclusively by NPR.

The sweeping changes were made to accelerate development of a new generation of nuclear reactor designs. They occurred over the fall and winter at the Department of Energy, which is currently overseeing a program to build at least three [new experimental commercial nuclear reactors](#) by July 4 of this year.

The changes are to departmental orders, which dictate requirements for almost every aspect of the reactors' operations — including safety systems, environmental protections, site security and accident investigations.

NPR obtained copies of over a dozen of the new orders, none of which is publicly available. The orders slash hundreds of pages of requirements for security at the reactors. They also loosen protections for groundwater and the environment and eliminate at least one key safety rule. The new orders cut back on requirements for keeping records, and they raise the amount of radiation a worker can be exposed to before an official accident investigation is triggered.

Over 750 pages were cut from the earlier versions of the same orders, according to NPR's analysis, leaving only about one-third of the number of pages in the original documents.

Groundwater rules loosened

Protection of groundwater is no longer a "must." Rather, companies must give "consideration" to "avoiding or minimizing" radioactive contamination. Requirements for monitoring and documentation are also softened.

Added Removed Changed

CURRENT RULES	NEW RULES
DOE O 458.1 Radiation Protection Of The Public And The Environment PROTECTION OF DRINKING WATER AND GROUND WATER Ground water must be protected from radiological contamination to ensure compliance with dose limits in the Order and consistent with ALARA process requirements. To this end, DOE must ensure that: (a) Baseline conditions of the ground water quantity and quality are documented; (b) Possible sources of, and potential for, radiological contamination are identified and assessed; (c) Strategies to control radiological contamination are documented and implemented; (d) Monitoring methodologies are documented and implemented; and (e) Ground water monitoring activities are integrated with other environmental monitoring activities.	NE O 458.1A Radiation Protection Of The Public And The Environment PROTECTION OF DRINKING WATER AND GROUND WATER Consideration must be given to avoiding or minimizing potential radiological contamination of groundwater from NE-authorized nuclear facilities and radiological activities, to ensure compliance with public dose limits in this Order and consistent with ALARA process requirements. To this end, DOE must ensure that: (i) baseline conditions of the ground water quantity and quality may be considered; (ii) potential sources of, and potential for, radiological contamination may be identified and assessed; (iii) strategies to control radiological groundwater contamination may be developed, as appropriate; (e) Ground water monitoring activities are (iv) monitoring may be implemented, as appropriate, and integrated with other environmental monitoring activities.

Source: U.S. Department of Energy
Credit: Compiled by Geoff Brumfiel and Arundathi Nair/NPR, graphic by Brent Jones/NPR

The new generation of nuclear reactor designs, known as small modular reactors, are being backed by billions in private equity, venture capital and public investments. Backers of the reactors, including tech giants Amazon, Google and Meta, have said they want the reactors to one day supply cheap, reliable power for artificial intelligence. (Amazon and Google are financial supporters of NPR.) Outside experts who helped review the rules for NPR criticized the decision to revise them without any public knowledge.

"I would argue that the Department of Energy relaxing its nuclear safety and security standards in secret is not the best way to engender the kind of public trust that's going to be needed for nuclear to succeed more broadly," said Christopher Hanson, who chaired the Nuclear Regulatory Commission from 2021 to 2025, when he was [fired by President Trump](#).

"They're taking a wrecking ball to the system of nuclear safety and security regulation oversight that has kept the U.S. from having another Three Mile Island accident," said Edwin Lyman, director of nuclear power safety at the Union of Concerned Scientists. "I am absolutely worried about the safety of these reactors."

In a lengthy statement to NPR, the Department of Energy defended the changes. "The reduction of unnecessary regulations will increase innovation in the industry without jeopardizing safety," it said.

It said that early copies of the new rules were shared with the companies as part of an "iterative effort" to develop a regulatory framework that would "expedite our review process while maintaining safety and security standards."

(The orders seen by NPR were not marked as drafts and had the word "Approved" clearly displayed on their cover pages.)

"The Department anticipates publicly posting the directives later this year," it said in its statement.

A new nuclear path

The origins of the changes can be traced to the Oval Office. In May of last year, Trump sat behind the Resolute Desk and [signed a series of executive orders on nuclear energy](#).

"It's a hot industry, it's a brilliant industry, you have to do it right," Trump said as smiling executives from the nuclear industry looked on. "It's become very safe and environmental, yes 100%." Among the [executive orders](#) Trump signed that day was one that called for the creation of a new program at the Department of Energy to build experimental reactors. The document Trump signed explicitly stated that "The Secretary shall approve at least three reactors pursuant to this pilot program with the goal of achieving [nuclear] criticality in each of the three reactors by July 4, 2026."

Trigger for accident investigation raised

The new order raises the bar for an official accident investigation from incidents that expose workers to two times the legal dose, to those at four times.

Added Removed Changed

CURRENT RULES	NEW RULES
DOE O 225.1B Accident Investigations LOSS OF CONTROL OF RADIOACTIVE MATERIAL (f) Any single accident that results in: (a) A general employee exceeding any of the external dose limits in 10 C.F.R. Part 835.202, Occupational Dose Limits for General Employees, by a factor of two or more,	NE O 225.1 Accident Investigations LOSS OF CONTROL OF RADIOACTIVE MATERIAL (f) Any single accident that results in: a. A general employee exceeding any of the external dose limits in 10 C.F.R. Part 835.202, Occupational Dose Limits for General Employees, by a factor of four or more.

Source: U.S. Department of Energy
Credit: Compiled by Geoff Brumfiel and Arundathi Nair/NPR, graphic by Brent Jones/NPR

In other words, the Department of Energy had just over a year to review, approve and oversee the construction of multiple, untested nuclear reactors. That timeline has raised eyebrows.

"To say that it's aggressive is a pretty big understatement," said Kathryn Huff, a professor of plasma and nuclear engineering at the University of Illinois at Urbana-Champaign who served as head of the DOE's Office of Nuclear Energy from 2022 to 2024. Research reactors typically take at least two years to build from the point when construction begins, Huff said. Few — if any — have been built on the timescale laid out in the executive order.

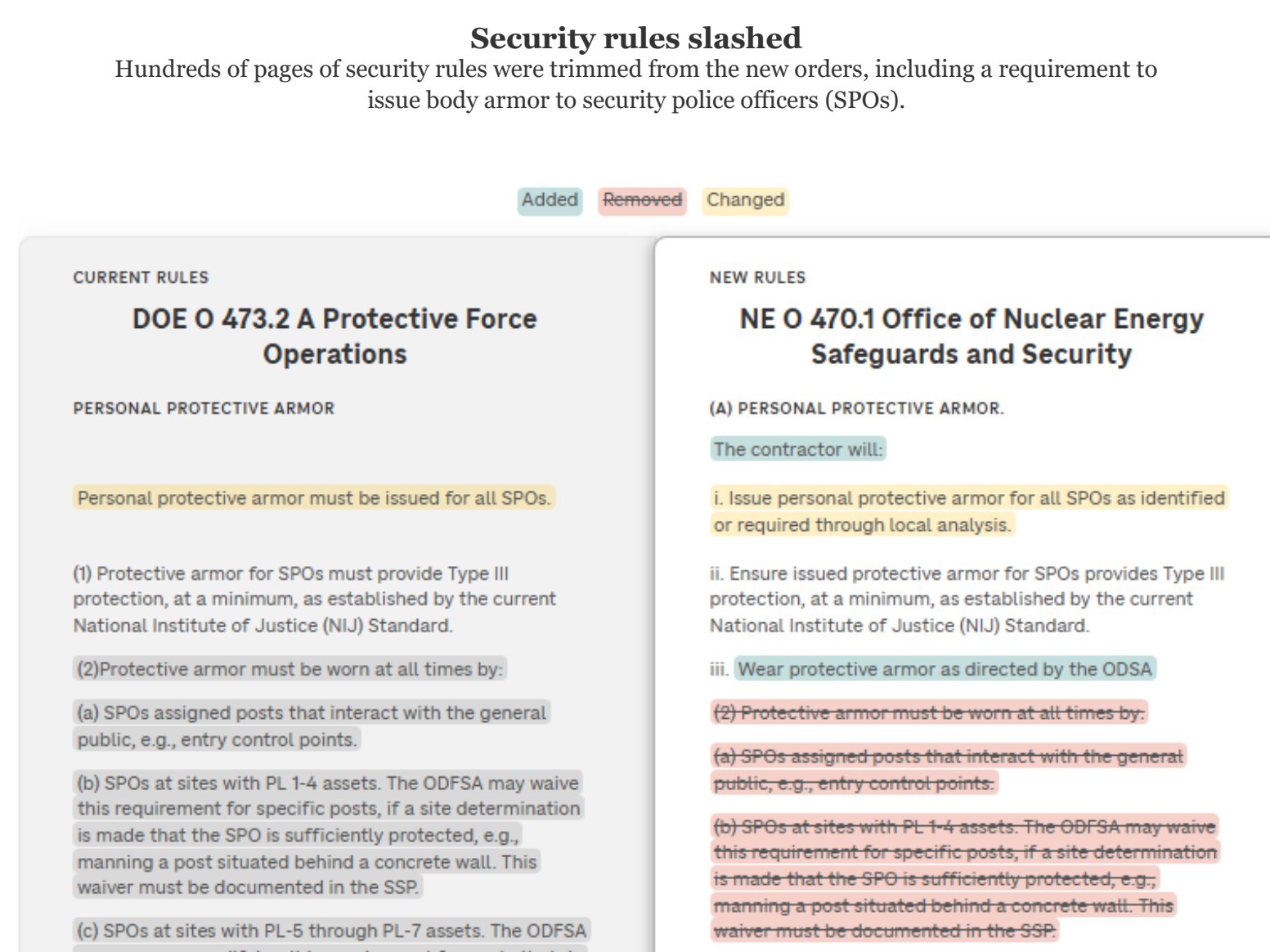
Officials at the Energy Department knew the clock was ticking. In June, they met with the heads of several companies at the Nuclear Energy Institute, the nuclear industry's main lobby group in Washington, D.C. They briefed the gathering of CEOs, lawyers and nuclear engineers about the department's new "Reactor Pilot Program."

"One thing I do want to stress, this is not a funding opportunity," Michael Goff, the DOE's principal deputy assistant secretary for nuclear energy, said during the meeting, which was recorded. Rather than offering money, the Reactor Pilot Program was promising something else that the companies had long wanted — a pathway to quickly get new test reactor designs through regulatory approval.

"Our job is to make sure that the government is no longer a barrier," said Seth Cohen, a lawyer at the Department of Energy responsible for implementing Trump's executive orders.

The DOE was uniquely positioned to offer a speedy pathway to approval. The nation's commercial nuclear reactors are typically under the regulatory oversight of the Nuclear Regulatory Commission. Hanson says the NRC is independent and known for its rigor and public process.

Sites across the country will host new reactor designs



Credit: Compiled by Geoff Brumfiel/NPR, Map by Brent Jones/NPR

But since the NRC began its work in 1975, the Energy Department has retained the ability to regulate its own reactors, which have historically been used for research and nuclear weapons-related activities.

The rules governing DOE reactors are a mix of federal regulations and directives known as "orders." Changes to federal regulations require public notice and comment, but DOE's orders can be legally changed internally with no public comment period. The orders have historically been made public via [a DOE database](#).

Until now, the DOE's rules have typically applied to just a handful of reactors located on government property. The Reactor Pilot Program expands that regulatory authority to all reactors built as part of the program. Officials explained to the crowd in the June meeting that this includes DOE-contracted reactors built outside of the department's national laboratories.

And while broadening its oversight, officials said, the safety personnel located primarily at Idaho National Laboratory also rewrite the DOE's orders for these reactors.

"DOE orders and standards are under evaluation as part of this regulatory reform," Christian Naton, an official from DOE's Idaho Operations Office, told the gathering. "What you will see in the near term is a streamlined set of requirements to support this reactor authorization activity."

Rules rewritten

The documents reviewed by NPR show just how extensive the streamlining effort has been.

The new orders strip out some guiding principles of nuclear safety, notably a concept known as "As Low As Reasonably Achievable" (ALARA), which requires nuclear reactor operators to keep levels of radiation exposure below the legal limit whenever they can. The ALARA standard has been in use for decades at both the Department of Energy and the Nuclear Regulatory Commission.

Removing the standard means that new reactors could be constructed with less concrete shielding, and workers could work longer shifts, potentially receiving higher doses of radiation, according to Tison Campbell, a partner at K&L Gates who previously worked as a lawyer at the Nuclear Regulatory Commission.

"So the result could be lower construction costs, saved employment costs and things like that," Campbell said. "That could reduce the overall financial burden of constructing and operating a nuclear powerplant."

Huff said that many people in the industry think the concept of ALARA has become overly onerous, and she agrees it's worth reconsidering the standard.

"The argument against ALARA is that in a lot of cases it's been mismanaged and used overly stringently in ways that go beyond the 'reasonable,'" Huff said. But not everyone wants to rethink ALARA.

"It certainly cost the industry money to lower doses [of radiation]," said Emily Caffrey, a health physicist at the University of Alabama at Birmingham. "But I don't think it's been incredibly problematic."

In a memo issued earlier this month, Secretary of Energy Chris Wright gave approval to end ALARA, in part to "reduce the economic and operational burden on nuclear energy while aligning with available scientific evidence." The existence of the memo [was first reported](#) by E&E News.

However, the orders seen by NPR suggest the department had already begun removing the ALARA requirement from the new rules as early as August, months before the secretary's approval was given.

"The Department of Energy is, and always will be, committed to the highest standards of safety for workers and communities," the agency said in its statement. Although ALARA had been removed from the orders "the ALARA standards have not changed," it said.

ALARA is not the only safety principle that has been stripped from the orders. Gone too is the requirement to have an engineer designated to each of a reactor's critical safety systems. Known as a cognizant system engineer, the idea is to task one person to take responsibility for understanding each part of a reactor that could lead to a severe accident if it failed. The department told NPR that the requirement for such an engineer was an "unnecessary burden," and that it had other processes in place to ensure safety.

The new rules also remove a requirement to use the "best available technology" to protect water supplies from the discharge of radioactive material.

"Why wouldn't you be using the best available technology? I don't understand the motivation for cutting things like that," Caffrey said.

The revised orders leave out dozens of references to other documents and standards, including the department's [entire manual](#) for managing radioactive waste. Some lines from the 59-page manual have been integrated into a new 25-page order on radioactive waste management, but pages of detailed requirements for waste packaging and monitoring have been removed.

The Energy Department said the changes to the nuclear waste order maintained all necessary requirements and were made to provide nuclear waste rules in "a more streamlined 'user friendly' format."

But perhaps nowhere are the cuts more obvious than in the new order on safeguards and security. Seven security directives totaling over 500 pages have been consolidated into a single, 23-page order.

Security rules slashed

Hundreds of pages of security rules were trimmed from the new orders, including a requirement to issue body armor to security police officers (SPOs).

Added Removed Changed

CURRENT RULES	NEW RULES
DOE O 473.2 A Protective Force Operations PERSONAL PROTECTIVE ARMOR Personal protective armor must be issued for all SPOs. (f) Protective armor for SPOs must provide Type III protection, at a minimum, as established by the current National Institute of Justice (NIJ) Standard. (2) Protective armor must be worn at all times by: (a) SPOs assigned posts that interact with the general public, e.g., entry control points. (b) SPOs at sites with PL 1-4 assets. The ODFSA may waive this requirement for specific posts, if a site determination is made that the SPO is sufficiently protected, e.g., manning a post situated behind a concrete wall. This waiver must be documented in the SSP. (c) SPOs at sites with PL-5 through PL-7 assets. The ODFSA may approve modifying this requirement for posts that do not interact with the general public. (d) When not worn, protective armor must be stationed or positioned so it can be donned without impacting response times. (3) The issuance and use of ballistic helmets and/or Type IIIA soft body armor as a complement to Type III protection is an ODFSA determination based on the results of the VA or SRA, as applicable, and must be documented in the SSP. (4) If protective armor is issued to SPOs, based on Site/Program Office decision, the above requirements (2), (1) and (2) apply.	NE O 470.1 Office of Nuclear Energy Safeguards and Security (A) PERSONAL PROTECTIVE ARMOR. The contractor will: I. Issue personal protective armor for SPOs as identified or required through local analysis. II. Ensure issued protective armor for SPOs provides Type III protection, at a minimum, as established by the current National Institute of Justice (NIJ) Standard. III. Wear protective armor as directed by the ODSA. (2) Protective armor must be worn at all times by: (a) SPOs assigned posts that interact with the general public, e.g., entry control points. (b) SPOs at sites with PL 1-4 assets. The ODFSA may waive this requirement for specific posts, if a site determination is made that the SPO is sufficiently protected, e.g., manning a post situated behind a concrete wall. This waiver must be documented in the SSP. (c) SPOs at sites with PL-5 through PL-7 assets. The ODFSA may approve modifying this requirement for posts that do not interact with the general public. (d) When not worn, protective armor must be stationed or positioned so it can be donned without impacting response times. (3) The issuance and use of ballistic helmets and/or Type IIIA soft body armor as a complement to Type III protection is an ODFSA determination based on the results of the VA or SRA, as applicable, and must be documented in the SSP. (4) If protective armor is issued to SPOs, based on Site/Program Office decision, the above requirements (2), (1) and (2) apply.

Source: U.S. Department of Energy
Credit: Compiled by Geoff Brumfiel and Arundathi Nair/NPR, graphic by Brent Jones/NPR

Gone are detailed requirements for firearms training, emergency drills, officer-involved shooting procedures and limits on how many hours security force officers can work in a day or week. Entire chapters specifying how nuclear material should be secured and what sorts of physical barriers should be built to protect it have been reduced to bullet points.

"Security is an expense that the nuclear industry has long complained about," Lyman said. Paying for a guard force is costly and many companies would like to reduce the requirements, he said. "They don't know why they have to pay so much money to protect against something they think is never going to happen."

Reviewing the new security rules, Lyman said he felt the general requirements are allowing companies "to write their own ticket as far as security goes." He's especially concerned because several of the new reactor designs use higher levels of enriched uranium in their cores, which could make them targets of theft.

In its statement the Department of Energy said that the changes "did not remove any requirements significant to security." "This order only removed requirements that were unnecessary for security and increased burden and costs," it said.

Loosening protections for the environment and workers

NPR's review of the new orders shows that, in certain cases, they also appear to loosen rules about discharging radioactive material.

For example, the previous version of an order titled "Radiation Protection for the Public and the Environment" states that discharging radioactivity "from DOE activities into non-federally owned sanitary sewers are prohibited," then provides a limited series of exceptions.

The new standard says only that radioactive discharges into sanitary sewers "should be avoided." Similar language changes were made to soften restrictions on groundwater discharges, and protections for the environment.

Experts who were asked to review the changes by NPR agreed that the net effect was to loosen the standards.

"Anywhere they have changed 'prohibited' or 'must' to 'should be' or 'can be' — that is a loosening of regulation. That's a big change in words, in meaning," Caffrey said.

Environmental protections stripped

Rather than requiring protection of the environment, the new order suggests "minimizing" environmental impacts "if practical."

CURRENT RULES	NEW RULES
DOE O 458.1 Radiation Protection Of The Public And The Environment — Biota PROTECTION OF BIOTA (f) Radiological activities that have the potential to impact the environment must be conducted in a manner that protects populations of aquatic animals, terrestrial plants, and terrestrial animals in local ecosystems from adverse effects due to radiation and radioactive material released from DOE operations. (2) When actions taken to protect humans from radiation and radioactive materials are not adequate to protect biota then evaluations must be done to demonstrate compliance with paragraph 4.3(f) of this Order in one or more of the following ways: (a) Use DOE-STD-1153-2002, A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota. (b) Use an alternative approach to demonstrate that the dose rates to representative biota populations do not exceed the dose rate criteria in DOE-STD-1153-2002, Table 2.2. (c) Use an ecological risk assessment to demonstrate that radiation and radioactive material released from DOE operations will not adversely affect populations within the ecosystem.	NE O 458.1 Radiation Protection Of The Public And The Environment — Biota PROTECTION OF BIOTA Consideration must be given to avoiding or minimizing, if practical, potential adverse impacts to aquatic animals, terrestrial plants, and terrestrial animals in local ecosystems from radiation and releases of radioactive material released from DOE operations, using a graded approach. (2) When actions taken to protect humans from radiation and radioactive materials are not adequate to protect biota then evaluations must be done to demonstrate compliance with paragraph 4.3(f) of this Order in one or more of the following ways: (a) Use DOE-STD-1153-2002, A-Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota. (b) Use an alternative approach to demonstrate that the dose rates to representative biota populations do not exceed the dose rate criteria in DOE-STD-1153-2002, Table 2.2. (c) Use an ecological risk assessment to demonstrate that radiation and radioactive material released from DOE operations will not adversely affect populations within the ecosystem.

Source: U.S. Department of Energy
Credit: Compiled by Geoff Brumfiel and Arundathi Nair/NPR, graphic by Brent Jones/NPR

The changes constitute "very clearly a loosening that I would have wanted to see exposed to public discussion," Huff told NPR. She calls the relaxing of environmental rules "especially disappointing" because the Idaho National Lab, where several of the reactors are due to be built, has been the site of ecological preservation activities in the past. "I think some of those preservation activities have had a great positive impact on the ecosystem there," she said.

In its statement, the Energy Department said that the changes continue to protect the public and environment from "undue risks."

"DOE follows applicable U.S. EPA requirements in these areas," it said.

There are signs that the Energy Department is seeking to change safety rules beyond the orders seen by NPR. Last week, the department published a plan to exclude some worker safety standards in order to help the reactor program move more quickly. The [proposed rule change](#) would strip out some standards for things like respiratory protection and welding. Because the worker safety rules are part of the Code of Federal Regulations, the department was required by law to publish the proposed changes. The agency said in its notice that the changes "present significant advantages that can enhance operational efficiency and safety for DOE contractors."

Concierge service

The new orders are now being used by around 30 experts across DOE and around a dozen experts on loan from the NRC to conduct design and safety reviews of 11 reactor designs being built by 10 private companies.

Each company also has access to a "Concierge Team" to "provide assistance to the applicant to ensure expeditious processing of its application," according to a memo also obtained by NPR, which has not been made public.

The team is made up of "representatives from the Secretary's office, the Office of the General Counsel, the Office of Nuclear Energy" and each team member reports directly to the secretary of energy — raising the possibility that senior officials could exert pressure on lower-level staff to speed safety evaluations of the new reactors.

The DOE said that the Concierge Team's only purpose was to "add efficiency" to the application process. "Membership on the Concierge Team does not provide any authority over DOE's safety reviewers," it said.

Reactors by July

Ultimately, experts who viewed the new rules had doubts about whether they really would help the Reactor Pilot Program reach its goal of building three new reactors by July.

Hanson said he believes the numerous cuts to the new orders will not necessarily simplify the review process. One of the benefits of having things explicitly written down was that "contractors and others knew how to comply with the rules," he said. "If you take that away, you might have more flexibility, maybe, but it's also less clear how to do that."

The orders also clearly laid out the steps needed to ensure companies abided by other relevant laws, Campbell said. He worries that the rewrites that loosen rules on things like radiological discharges could actually lead companies to violate other environmental and safety laws. For example, radiological releases into public sewers might violate legal limits under the Clean Water Act.

Companies may not read those underlying laws, "so I think you're setting them up to violate statutes or regulations that are going to remain in place," he said.

But above all, the fact that the rewrites were done without public knowledge could be the most damaging, said Huff. In the past, public distrust has been a huge barrier to the development of nuclear power, and transparency is an important way to counter that mistrust.

"In the best world, the public should expect as much openness from the government as is possible," she said. "If it's possible to share with the companies at this point, then there's a really important question as to why it's not public."

NPR's [Arundathi Nair](#) contributed to this report.

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