

From: [Henry Sokolski](#)
To: [RulemakingComments Resource](#)
Subject: [External_Sender] Comments on NRC Proposed Framework for Advanced Reactors
Date: Monday, January 03, 2022 12:07:57 PM
Attachments: [Henry's Signature.png](#)
[Comments on NRC Proposed Copy 1.3.22.pdf](#)

To the members of the U.S. Nuclear Regulatory Commission and staff,

Attached please find a letter addressed to the commissioners of the Nuclear Regulatory Commission commenting on the proposed Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors. Please let me know if this letter was received.

Sincerely,
Henry Sokolski
Executive Director
The Nonproliferation Policy Education Center

January 3, 2022

To the members of the U.S. Nuclear Regulatory Commission and staff,

My name is Henry Sokolski. I am Executive Director of the Nonproliferation Policy Education Center, a 501 (c)3 nonpartisan, nonprofit, educational organization, which is primarily focused on the national security implications of the further spread of nuclear weapons-related technologies that also is concerned about promoting nuclear security and nuclear safety internationally. My letter is in response to the Nuclear Regulatory Commission's (NRC's) request for comments on the agency's proposed Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors (Docket ID NRC-2019-0062).

The NRC is developing new requirements for the licensing and regulation of advanced nuclear reactors in response to the instructions of the Nuclear Energy Innovation and Modernization Act (NEIMA, Pub. L. 115 439). I note that NEIMA instructs the Commission to carry out the Act's instructions in a manner "consistent with the role of the Commission in protecting public health and safety and common defense and security."

In my view, the preliminary proposed rule language for the new licensing framework the NRC sets out for the licensing and regulation of advanced nuclear reactors does not fully meet the law's requirements.

The Commission states the new approach would (with our emphasis): (1) *Continue to provide reasonable assurance of adequate protection of public health and safety and the common defense and security*, (2) promote regulatory stability, predictability, and clarity, (3) reduce requests for exemptions from the current requirements in 10 CFR parts 50 and 52, (4) establish new requirements to address non-light-water reactor technologies, (5) recognize technological advancements in reactor design, and

(6) *credit the response of advanced nuclear reactors to postulated accidents, including slower transient response times and relatively small and slow release of fission products.* The proposed rule would add 10 CFR part 53, “Licensing and Regulation of Advanced Nuclear Reactors.”

I will restrict my comments to the fundamentals of the Commission’s new approach, specifically points (1) and (6) above.

Adequate Protection

The Commission says it will continue its standard of “reasonable assurance of adequate protection of public health and safety and the common defense and security.” That sounds good, and we know that is the safety and security standard the NRC has been applying. But the standard in the Atomic Energy Act (Section 182) is “*adequate protection* to the health and safety of the public,” not “reasonable assurance of adequate protection.”

The Act makes clear, over and over, that the Commission’s responsibility is to protect the public. Acknowledging that perfection is unattainable, the Act softens the decision-making requirement for public protection with the qualification of “adequate.” So, what the law expects is that the commissioners provide adequate protection, which in practice they themselves define.

What the commissioners have done over the years, however, is to water down the nuclear safety standard by adding another qualifier—“reasonable assurance”—to the standard they have to apply, so it has become “reasonable assurance of adequate protection,” which on the face of it is a weaker standard.

Does changing the words make a difference in safety decisions? Yes, it clearly does. Honesty requires acknowledging that commissioners are often not familiar with the technical details underlying the decisions before them. It’s a lot easier to rationalize that you have carried out your safety responsibilities to provide adequate (not perfect) protection if you have the extra crutch of “reasonable assurance.” It makes a commissioner’s job easier, but the public is not getting what the law mandates.

The Commission should consider also that the Atomic Energy Act mandates that its counterpart at the Department of Energy, the Defense Nuclear Facilities Safety Board, apply the adequate protection standard (with added emphasis): “The Board shall recommend to the Secretary of Energy those specific measures that should be adopted to ensure that public health and safety are *adequately protected*. (Section 312). This makes for a strange, one might say embarrassing, state-of-affairs—the DOE legal standard, which follows the law, is stricter than that of the NRC.

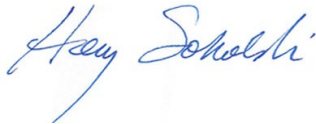
Advanced Reactor Characteristics and Safety

It is not entirely clear what the NRC has in mind in announcing it intends to “credit” the characteristics of advanced nuclear reactors in evaluating license application. At one level it is a truism: of course, in evaluating safety the NRC reviewers would

analyze an advanced reactor design in terms of its characteristics. But the specific emphasis on this in the new approach suggests that the NRC thinks advanced reactors have safety advantages so the regulations can be relaxed. I hope this is not what the Commission intends, but in any case, the NRC should clarify the point.

At a minimum, the NRC seems to be saying that in moving to what it calls advanced reactors, there is no need to reach for a higher safety standard. The impression that is left is that above all, the commissioners do not want to imperil the introduction of the new types of reactors. This is at odds with the historic approach of, say, the airline industry. When it introduced jet aircraft it expected to meet a much higher standard than was the case with propeller aircraft. The difference is of course that airlines have to attract passengers, so the public has a significant say in airline safety, whereas it has almost no say when it comes to safety of nuclear power plants. It is up to the commissioners to represent the public. They need to be more diligent in doing so. That is why the NRC should use the stricter safety standard of the Atomic Energy Act's—"adequate protection"—rather than a "reasonable assurance" of such.

Sincerely,

A handwritten signature in blue ink that reads "Henry Sokolski". The signature is fluid and cursive, with the first name "Henry" and last name "Sokolski" clearly legible.

Henry D. Sokolski
Executive Director
The Nonproliferation Policy Education Center

Henry Sokolski
Executive Director
The Nonproliferation Policy Education Center
1600 Wilson Blvd, Suite 640
Arlington, VA 22209
My Desk 1-703-271-9852
My Cell 1-571-277-1815
NPEC Office 1-571-970-3187
henry@npolicy.org
www.npolicy.org

The Nonproliferation Policy Education Center

1600 Wilson Boulevard, Suite 640, Arlington, VA 22209
phone: (571) 970-3187 / e-mail: info@npolicy.org / www.npolicy.org

Executive Director

Henry Sokolski

January 3, 2022

Board of Advisors

To the members of the U.S. Nuclear Regulatory Commission and staff:

Mark Albrecht
*Former Executive Secretary,
National Space Council*

My name is Henry Sokolski. I am Executive Director of the Nonproliferation Policy Education Center, a 501 (c)3 nonpartisan, nonprofit, educational organization, which is primarily focused on the national security implications of the further spread of nuclear weapons-related technologies that also is concerned about promoting nuclear security and nuclear safety internationally. My letter is in response to the Nuclear Regulatory Commission's (NRC's) request for comments on the agency's proposed Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors (Docket ID NRC-2019-0062).

Peter Bradford
Vermont Law School

Torrey Froscher
*Former Senior
CIA Official*

The NRC is developing new requirements for the licensing and regulation of advanced nuclear reactors in response to the instructions of the Nuclear Energy Innovation and Modernization Act (NEIMA, Pub. L. 115 439). I note that NEIMA instructs the Commission to carry out the Act's instructions in a manner "consistent with the role of the Commission in protecting public health and safety and common defense and security."

Robert Jervis
Columbia University

Daniel M. Kammen
*UC Berkley, Nuclear
Engineering Dept.*

Richard P. Lawless
NVM Consulting, LLC

In my view, the preliminary proposed rule language for the new licensing framework the NRC sets out for the licensing and regulation of advanced nuclear reactors does not fully meet the law's requirements.

John Lauder
*Former Director, CIA
Nonproliferation Center*

The Commission states the new approach would (with our emphasis): (1) *Continue to provide reasonable assurance of adequate protection of public health and safety and the common defense and security*, (2) promote regulatory stability, predictability, and clarity, (3) reduce requests for exemptions from the current requirements in 10 CFR parts 50 and 52, (4) establish new requirements to address non-light-water reactor technologies, (5) recognize technological advancements in reactor design, and (6) *credit the response of advanced nuclear reactors to postulated accidents, including slower transient response times and relatively small and slow release of fission products*. The proposed rule would add 10 CFR part 53, "Licensing and Regulation of Advanced Nuclear Reactors."

David Rapoport
*University of California,
Los Angeles*

Harvey Rishikof
*Former Dean,
National War College*

William Tobey
*Belfer Center, Harvard
University*

I will restrict my comments to the fundamentals of the Commission's new approach, specifically points (1) and (6) above.

Simon "Pete" Worden
Breakthrough Initiatives

The Nonproliferation Policy Education Center

1600 Wilson Boulevard, Suite 640, Arlington, VA 22209
phone: (571) 970-3187 / e-mail: info@npolicy.org / www.npolicy.org

Adequate Protection

The Commission says it will continue its standard of “reasonable assurance of adequate protection of public health and safety and the common defense and security.” That sounds good, and we know that is the safety and security standard the NRC has been applying. But the standard in the Atomic Energy Act (Section 182) is “*adequate protection* to the health and safety of the public,” not “reasonable assurance of adequate protection.”

The Act makes clear, over and over, that the Commission’s responsibility is to protect the public. Acknowledging that perfection is unattainable, the Act softens the decision-making requirement for public protection with the qualification of “adequate.” So, what the law expects is that the commissioners provide adequate protection, which in practice they themselves define.

What the commissioners have done over the years, however, is to water down the nuclear safety standard by adding another qualifier—“reasonable assurance”—to the standard they have to apply, so it has become “reasonable assurance of adequate protection,” which on the face of it is a weaker standard.

Does changing the words make a difference in safety decisions? Yes, it clearly does. Honesty requires acknowledging that commissioners are often not familiar with the technical details underlying the decisions before them. It’s a lot easier to rationalize that you have carried out your safety responsibilities to provide adequate (not perfect) protection if you have the extra crutch of “reasonable assurance.” It makes a commissioner’s job easier, but the public is not getting what the law mandates.

The Commission should consider also that the Atomic Energy Act mandates that its counterpart at the Department of Energy, the Defense Nuclear Facilities Safety Board, apply the adequate protection standard (with added emphasis): “The Board shall recommend to the Secretary of Energy those specific measures that should be adopted to ensure that public health and safety are *adequately protected*. (Section 312). This makes for a strange, one might say embarrassing, state-of-affairs—the DOE legal standard, which follows the law, is stricter than that of the NRC.

Advanced Reactor Characteristics and Safety

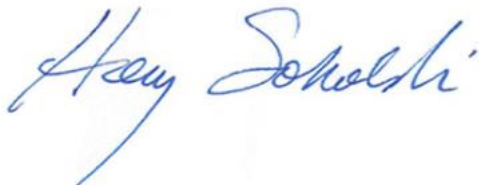
It is not entirely clear what the NRC has in mind in announcing it intends to “credit” the characteristics of advanced nuclear reactors in evaluating license application. At one level it is a truism: of course, in evaluating safety the NRC reviewers would analyze an advanced reactor design in terms of its characteristics. But the specific emphasis on this in the new approach suggests that the NRC thinks advanced reactors have safety advantages so the regulations can be relaxed. I hope this is not what the Commission intends, but in any case, the NRC should clarify the point.

The Nonproliferation Policy Education Center

1600 Wilson Boulevard, Suite 640, Arlington, VA 22209
phone: (571) 970-3187 / e-mail: info@npolicy.org / www.npolicy.org

At a minimum, the NRC seems to be saying that in moving to what it calls advanced reactors, there is no need to reach for a higher safety standard. The impression that is left is that above all, the commissioners do not want to imperil the introduction of the new types of reactors. This is at odds with the historic approach of, say, the airline industry. When it introduced jet aircraft it expected to meet a much higher standard than was the case with propeller aircraft. The difference is of course that airlines have to attract passengers, so the public has a significant say in airline safety, whereas it has almost no say when it comes to safety of nuclear power plants. It is up to the commissioners to represent the public. They need to be more diligent in doing so. That is why the NRC should use the stricter safety standard of the Atomic Energy Act's—"adequate protection"—rather than a "reasonable assurance" of such.

Sincerely,

A handwritten signature in blue ink that reads "Henry Sokolski". The signature is written in a cursive style with a long, sweeping underline.

Henry D. Sokolski
Executive Director
The Nonproliferation Policy Education Center