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United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

WASHINGTON, DC 20510-6175

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April 1, 2019

Ms. Kristine Svinicki
Chairman
11555 Rockville Pike
Rockville, MD 20852

Re: SECY-16-0142

Dear Chairman Svinicki:

We are writing concerning the Nuclear Regulatory Commission's (NRC) recently issued Mitigation of Beyond-Design-Basis Events Rule. This rule stemmed out of an eight-year NRC process to improve nuclear reactor safety in the United States in response to the Fukushima Daiichi nuclear power plant accident in Japan. We are concerned that changes from the proposal, issued in 2015, unnecessarily backtracks from critical safety requirements to protect our nuclear reactors against the flooding and seismic hazards that they face today and in the future.

While we are proponents of clean energy and believe nuclear power could be essential in helping us tackle the threats of climate change, our top priority for our domestic nuclear power industry remains public safety.

Just last month, we marked eight years since a massive earthquake and tsunami triggered events that led to the nuclear meltdowns at the Fukushima Daiichi nuclear power plant, 230 miles northeast of Tokyo, Japan. The people of Japan are still recovering from this accident and public confidence in the nuclear industry has not recovered.

Shortly after the events unfolded at the Fukushima Daiichi nuclear power plant, the NRC committed to the EPW committee that it would conduct a comprehensive review of the causes of the Fukushima accident and review and address any potential risks that may exist at our own reactors. In particular, the review would focus on reactors of similar design, reactors near seismic fault lines, and reactors near coastlines or other possible flooding hazards. The NRC also committed to apply any lessons learned from the Fukushima Daiichi accident to our nuclear regulatory process to ensure we never experience a similar event in the United States. An independent NRC staff task force issued twelve broad safety recommendations in July 2011 and the Commission and nuclear industry have been working to implement these recommendations ever since.

In implementing the Fukushima recommendations, the NRC requested that all U.S. nuclear power plant operators assess potential seismic and flooding hazards to their reactors and perform "walkdown" inspections of the currently installed seismic and flooding protection features. In these reviews and inspections, the NRC and industry came to realize that some of the protections in place were inadequate to meet the current seismic and flooding hazards. They realized that more work needed to be done across the nuclear industry to address possible natural disaster events that could overcome the safety designs of certain reactors, known as "beyond design-basis events."

Since identifying these safety gaps, the nuclear industry has spent several billions dollars to update and modify plant structures, systems and equipment to improve reactor safety to maintain safety in the event of flooding or seismic events. At the same time, the NRC forged ahead on regulatory actions to address these safety gaps and other lessons learned from Fukushima.

In November 2015, the NRC proposed a comprehensive post-Fukushima Rule, with full agreement of the Commission at the time, including you, called the “Mitigation of Beyond-Design-Basis Events Rule.” In the proposal, NRC required the industry to take further steps beyond their licensed design to address seismic or flooding concerns that may not have been known at the time the reactor’s license was issued. After receiving under 200 individual public comments, staff issued a draft final rule that kept these mandatory requirements for the Commission to approve in December 2016. It took more than two years for the Commission to approve the rule and there were remarkable differences in the final rule from the 2016 draft final rule. We believe these differences have significantly weakened the original proposal and compromised on safety.

Under your leadership, the Commission finalized an order on January 24, 2019 that backtracks on several components of the Mitigation of Beyond-Design-Basis Events Rulemaking. In the final rule, NRC decided to ignore staff recommendations and make preventive actions to address beyond-design flooding and seismic events voluntary. Most of industry has already addressed these issues, but not requiring mandatory action to continually address the two main issues that arose during Fukushima seems very concerning. These concerns are also reflected in the votes submitted by your colleagues, Commissioners Baran and Burns. What is most peculiar is that when our staff asked the NRC about any public comments calling for these changes, they were told there were none. From what our staff have found, there seem to be no calls from outside groups or from career staff asking for the weakening of this rule.

The new rule appears short-sighted to say the least. U.S. nuclear power plants should not only incorporate lessons learned from one of the worst nuclear accidents in history, but the industry should also be preparing for the effects of climate change and sea-level rise. The Fourth National Climate Assessment^[1] issued in November 2018 found that global mean sea level has increased 16-21 centimeters (7-8 inches) since 1900 and is expected to rise up to 1-4 meters by the end of the century. Before 2045, tidal flooding is expected to occur five times more frequently – flooding some coastal areas for over 50% of the year. In the United States, there are nine nuclear plants within three kilometers of the ocean and four of those reactors have been deemed susceptible to flooding and sea-level rise.^[2] The Fourth National Climate Assessment also found that extreme rain events and more intense hurricanes are likely to occur over the next century – making the recent flooding events in Nebraska, Maryland and Texas more normal. Now is the time to harden our nuclear facilities to deal with rising seas and more intense storms due to climate change, not weaken them.

In order to better understand the Commission’s decision to weaken this rule, we request answers to the following questions and related information:

- Did you or anyone on the Commission receive any comments outside the comment period regarding the Mitigation of Beyond-Design-Basis Events Rule, SECY-16-0142, asking for the

^[1] USGCRP, 2018: *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018

^[2] <https://www.hakaimagazine.com/features/are-coastal-nuclear-power-plants-ready-for-sea-level-rise/>

Commission to change mandatory requirements to voluntary requirements in the final rule from the draft final rule?

- According to correspondence and public comments from NEI, industry appears to have agreed to the part of rule where plants must update their design plans to withstand extreme hazard events. We request that the Commission provide a list of all briefings and meetings, and provide correspondence (including electronic mail) between Commissioners and NRC staff and any representatives of NEI, on the Mitigation of Beyond-Design-Basis Events rule after the comment period ended.
- How did the Commission take into account the latest warnings from Fourth National Climate Assessment and other recent scientific reports on how rising sea levels will affect nuclear power plants near coastlines?
- How did the Commission take into account the climate change science that projects more intense precipitation and flooding events across the U.S.?
- How does the Commission's final rule ensure that plants will be protected against the most severe events that they may experience, today and in the future? Please explain further than what you have included in your vote.
- Please provide a list of times when nuclear plants needed to be shut down – and how long those shut downs lasted – over the past ten years due to high winds, flooding events, or due to the lack of available cooling water.

The events that struck Japan less than a decade ago were reminders that we are all vulnerable to unexpected disasters, whether an act of nature or a terrorist attack. While we cannot predict when or where the next major disaster will occur, we know adequate preparation and response planning are vital to minimize injury and death when it does happen.

We look forward to your response by May 1, 2019. If you have any questions, please have your staff reach out to Laura Gillam on Senator Carper's EPW staff, laura_gillam@epw.senate.gov or Aaron Goldner on Senator Whitehouse's staff, aaron_goldner@whitehouse.senate.gov.

With best personal regards, we are

Sincerely yours,



Tom Carper
Ranking Member
Committee on Environment and
Public Works



Sheldon Whitehouse
Ranking Member
Subcommittee on Clean Air and
Nuclear Safety

Cc
Commissioner Baran
Commissioner Burns
Commissioner Caputo
Commissioner Wright