JAMES M. INHOFE, OKLAHOMA, *CHAIRMAN*

DAVID VITTER, LOUISIANA
JOHN BARRASSO, WYOMING
SHELLEY MOORE CAPITO, WEST VIRGINIA
MIKE CRAPO, IDAHO
JOHN BOOZMAN, ARKANSAS
JEFF SESSIONS, ALABAMA
ROGER WICKER, MISSISSIPPI
DEB FISCHER, NEBRASKA
MIKE ROUNDS, SOUTH DAKOTA
DAN SULLIVAN, ALASKA

BARBARA BOXER, CALIFORNIA
THOMAS R. CARPER, DELAWARE
BENJAMIN L. CARDIN, MARYLAND
BERNARD SANDERS, VERMONT
SHELDON WHITEHOUSE, RHODE ISLAND
JEFF MERKLEY, OREGON
KIRSTEN GILLIBRAND, NEW YORK
CORY A. BOOKER, NEW JERSEY
EDWARD J. MARKEY, MASSACHUSETTS

RYAN JACKSON, *MAJORITY STAFF DIRECTOR*
BETTINA POIRIER, *DEMOCRATIC STAFF DIRECTOR*

United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

WASHINGTON, DC 20510-6175

July 15, 2015

The Honorable Stephen Burns, Chairman
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Chairman Burns:

We are writing to express our concern with the Nuclear Regulatory Commission's (NRC's) growing use of qualitative factors to justify new regulatory requirements that are not cost-justified under 10 CFR 50.109, commonly known as the Backfit Rule. Two significant proposals currently pending before the Commission meet this description:

- SECY 15-0065: *Proposed Mitigation of Beyond-Design-Basis Events*[1] *(Mitigating Strategies)*; and
- SECY 15-0085: *Evaluation of the Containment Protection and Release Reduction for Mark I and Mark II Boiling Water Reactors Rulemaking Activities* [2] *(Containment Protection).*

THE BACKFIT RULE

The Backfit Rule requires the NRC staff to make certain that new or amended requirements or interpretations will yield a substantial safety benefit and are cost-justified *before* being imposed on reactor licensees. This requirement provides a sound basis for distinguishing between significant safety enhancements and unnecessary regulatory burden. This distinction is vital to ensure that limited resources are focused on matters with the greatest safety significance and to prevent wasteful spending on requirements with insufficient safety benefits.

Adherence to the Backfit Rule is also a key to maintaining the NRC's Principles of Good Regulation which state[3]:

[1] SECY 15-0065: *Proposed Mitigation of Beyond-Design-Basis Events*; May 15, 2015.
[2] SECY 15-0085: *Evaluation of the Containment Protection and Release Reduction for Mark I and Mark II Boiling Water Reactors Rulemaking Activities; June 25, 2015.*
[3] U.S. NRC *Principles of Good Regulation*.

PRINTED ON RECYCLED PAPER

- Efficiency: *Regulatory activities should be consistent with the degree of risk reduction they achieve.*
- Reliability: *Once established, regulation should be perceived to be reliable and not unjustifiably in a state of transition. Regulatory actions should always be fully consistent with written regulations and should be promptly, fairly, and decisively administered so as to lend stability to the nuclear operational and planning processes.*

SECY 12-0157 COMMONLY KNOWN AS "FILTERED VENTS"

Members of this Committee have previously raised concerns about the need for the NRC to uphold its tradition of disciplined cost benefit analysis. On February 4, 2013, in response to the NRC's proposal to mandate filtered vents, several members of this Committee wrote:

> *"We respectfully urge the NRC to take its time to make the correct regulatory changes that follow a responsible and thorough approach to ensure plant safety and that any new requirements established for the U.S. commercial nuclear reactor fleet are justified by the law, supported by sound data, and warranted by a robust cost-benefit analysis."*

This letter was in response to an NRC staff proposal, SECY 12-0157 "*Consideration of Additional Requirements for Containment Venting Systems for Boiling Water Reactors with Mark I and Mark II Containments*," which stated: "*A comparison of only the quantifiable costs and benefits of the proposed modifications, if considered safety enhancements, would not, by themselves, demonstrate that the benefits exceed the associated costs.*"[4] Undeterred, the NRC staff recommended the imposition of filtered vents based on the consideration of qualitative factors.

The Commission disagreed with that approach and directed the staff to develop a technical basis and rulemaking for alternative filtering strategies instead. That paper, SECY 15-0085 *Evaluation of the Containment Protection and Release Reduction for Mark I and Mark ii Boiling Water Reactors* (the Containment Protection paper), is pending before the Commission now. Independent of that work, the Commission also directed the staff to seek detailed Commission guidance on the use of qualitative factors in a future notation vote paper, SECY 14-0087: *Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses*" (the Qualitative Factors paper).[5]

QUALITATIVE FACTORS

In the Qualitative Factors paper, the NRC staff sought the Commission's guidance on the use of qualitative factors. The Commission gave the following direction to the NRC staff:

---

[4] SECY 12-0157, November 26, 2012.
[5] SECY 14-0087: *Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses; August 14, 2014.*

> *"This approval does not authorize an expansion of the consideration of qualitative factors in regulatory analyses and backfit analyses. The appropriate degree of weight of application of qualitative factors in regulatory decision making ultimately lies with the Commission."*
>
> And
>
> *"To ensure that qualitative factors are used in a judicious and disciplined manner, the revised guidance should continue to encourage quantifying costs to the extent possible and use qualitative factors to inform decision making, in limited cases, when quantitative analyses are not possible or practical (i.e., due to lack of methodologies or data)."*

We agree with the Commission's direction that the use of qualitative factors, which are subjective by their very nature, should be limited and the Commission should be the sole arbiter regarding the application of qualitative factors in decision-making. However, in spite of this clear direction from the Commission, the NRC staff justifies regulatory requirements in both the Mitigating Strategies and Containment Protection papers by using qualitative factors to supersede insufficient cost justifications.

CONTAINMENT PROTECTION

In their Draft Regulatory Basis accompanying the Containment Protection paper, the NRC staff notes that the nuclear industry proposed, and the NRC approved, the use of severe accident water addition and severe accident water management (SAWA/SAWM) as *options* for complying with the NRC order EA-13-109: *Order to Modify License with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions.*[6] However, later in the Containment Protection paper, the NRC staff states that it will establish a new *requirement* for SAWA/SAWM for additional purposes. Staff made this assertion despite their acknowledgement that:

- "… additional regulatory actions would not result in a substantial safety improvement…"; and
- "…the calculated safety benefits from SAWA in providing additional containment protection capabilities would not be justified using the NRC's established screening guidance for backfit evaluations…"

The acknowledgement that additional SAWA requirements are not justified is consistent with an earlier report by InsideNRC, "*NRC Staff Close to Recommending End to BWR Filtration Rulemaking,*" which quoted NRC staff:

---

[6] Draft Regulatory Basis for Containment Protection and Release Reduction for Mark I and Mark II Boiling Water Reactors, May 2015.

> *"NRC staff has performed a preliminary quantitative risk evaluation using a high-level conservative estimate that determined that any potential alternatives within CPRR rulemaking would not be considered substantial safety enhancement."*[7]

Although the record already demonstrates that new requirements are not justified, the Containment Protection paper currently pending before the Commission indicates the NRC staff intends to proceed with the new requirement and justifies this by relying on qualitative factors. This action disregards the Commission's direction to limit the use of qualitative factors to cases where quantitative analyses are not possible or practical. The quantitative analysis was both possible and practical as demonstrated by the fact that the quantitative analysis *was* performed; the analysis simply produced a result that does not justify further regulatory action. Consequently, the NRC staff chose to rely on qualitative factors to justify their decision, contrary to the Commission's direction *not* to expand the use of qualitative factors in analyses.

Additionally, the Commission's direction regarding qualitative factors, as stated previously, requires that: *"The appropriate degree of weight of application of qualitative factors in regulatory decision making ultimately lies with the Commission."* Additionally, under the Commission's direction regarding filtered vents, the staff was directed to provide a notation vote paper to the Commission if policy issues emerged. However, Committee staff learned that the NRC staff presented the Containment Protection paper to the Commission as an information paper, and did not seek Commission guidance on what is clearly a policy matter for the Commission. In fact, the NRC staff had previously indicated this intention in testimony before the Commission: "The paper won't be seeking Commission approval, but it will notify the Commission…" [8] It was only after receiving it that a commissioner converted the information paper into a Commission voting matter. In this fashion, the NRC staff appears to have disregarded the Commission's direction on the use of qualitative factors and attempted to supplant the Commission's judgement with its own.

MITIGATING STRATEGIES

Within the Mitigating Strategies paper, the NRC staff seeks to mandate Severe Accident Management Guidelines (SAMGs). The NRC staff admits that: "*…quantitative risk information indicates that SAMGs have a small safety benefit.*" However, the staff once again justifies their preferred course of action by relying on qualitative factors to supplement the quantitative analysis. They are taking this action in spite of their recognition that SAMGs are already in place under an industry-wide voluntary program and their conclusion that:

> *"…plant personnel, given their experience with mitigation strategies, would likely be able to implement strategies (even with outdated SAMGs…) that would be effective. As such, imposing SAMGs…is not likely to result in measureable reductions in risk."*

---

[7] Inside NRC Volume 36, Number 25, December 15, 2014.
[8] U. S. NRC: Briefing on the Status of Lessons Learned from the Fukushima Dai-Ichi Accident: April 30, 2015.

The Advisory Committee on Reactor Safeguards disagreed with both the staff's recommendation to mandate SAMGs and their basis for doing so:

> *"The SAMGs provide significant value to the operators because they contain guidance beyond that provided by the EOPs, which enhances the operators' capability to respond and cope with beyond-design-basis conditions and, while doing so, further protect the public. At issue is not whether SAMGs should be developed, implemented, trained upon, and exercised, but whether these activities are maintained and monitored through regulatory requirements or by a strengthened voluntary initiative. Given the extremely low likelihood that an event will lead to the use of SAMGs, regulatory requirements should not impose unnecessary burden or divert attention from more important safety objectives. (emphasis added)*
>
> *"We recognize the importance of the staff's proposal regarding SAMG development. However, we consider how the requirement is imposed to be as important as how the requirement is implemented. (emphasis added) Rather than obligating that development of SAMGs be required by rulemaking, thus triggering backfit considerations, voluntary compliance can accomplish the intended outcome effectively, but only if there is regulatory and public confidence that the SAMG programs remain current and effective throughout the life of each site. To achieve the timely objectives of the proposed rulemaking, the staff should ensure that formal commitments to develop, implement, and maintain SAMGs are documented by each licensee, thus providing an opportunity for their periodic examination and confirmation."*[9]

We find the ACRS' conclusion very compelling for the following reasons. The first reason is the ACRS' alignment with the NRC's Efficiency Principle: "*Regulatory activities should be consistent with the degree of risk reduction they achieve.*" We agree with the ACRS' caution that extremely low-likelihood events should not divert attention from more safety significant matters. This concern is embodied in the NRC's definition of the Cumulative Effects of Regulation, a valid concern discussed below in more detail. Lastly, we agree with the ACRS' focus on how SAMGs should be implemented through formal commitments from licensees with the added benefit of achieving timelier implementation. The ACRS' conclusion demonstrates why adherence to the Backfit Rule is crucial to ensuring an appropriate level of focus by the NRC and its licensees based on matters with significant safety focus.

CONCLUSION

We find it disconcerting, to say the least, that the NRC staff would repeatedly disregard Commission direction on such a fundamental matter as the premise for establishing new regulatory requirements. In its qualitative factors paper, the NRC staff asserted that: "*...the*

---

[9] U.S. NRC Advisory Committee on Reactor Safeguards letter report: *Draft SECY Paper, "Proposed Rulemaking: Mitigation of Beyond-Design-Basis Events"*; April 22, 2015.

current regulatory process is sound." We strongly agree. That sound regulatory process includes the Backfit Rule and the Commission's limitations regarding the use of qualitative factors.

However, the process only remains sound through disciplined adherence to and a strong reliance on thorough, quantitative cost benefit analyses. The NRC should not use qualitative factors to supersede a quantitative analysis when such analysis shows a requirement is not safety significant or cost-justified. Doing so would undermine the Backfit Rule and shift the NRC's regulatory process from a sound process based on safety significance into a subjective process based on staff opinion. As we stated previously, the Backfit Rule provides a sound basis for distinguishing between significant safety enhancements and unnecessary regulatory burden. Undermining the Backfit Rule through the increased use of qualitative factors will erode this distinction thereby increasing the imposition of requirements that are *not* safety-significant or cost-justified.

Such growth in unnecessary regulatory burden would exacerbate the cumulative effects of regulation. In SECY 11-0032, *Consideration of the Cumulative Effects of Regulation in the Rulemaking Process,* the NRC staff concluded: "CER can potentially distract licensee or entity staff from executing other primary duties that ensure safety or security." Preventing the imposition of requirements that lack safety benefit is a necessary corrective action to address a root cause of cumulative effects. If the Commission is committed to addressing the cumulative effects of regulation, then it is crucial for the Commission to enforce adherence to the Backfit Rule and ensure that any additional regulatory requirements truly provide a substantial increase in overall safety <u>and</u> warrant the additional costs. We believe a critical first step is to reestablish the Commission's prior policy of requiring Commission engagement prior to rulemaking initiation. This is particularly important given the NRC's staff's growing proclivity for sidestepping Commission direction regarding limits on the use of subjective, qualitative factors thereby dedicating time and resources to matters that are shown to lack safety significance.

From a precedent-setting perspective, a Commission decision to adopt the NRC staff's positions in either the Containment Protection or Mitigating Strategies papers would severely limit the Commission's ability to limit the imposition of future proposals that are not safety significant. Such an action would damage the agency's credibility as the world-wide gold standard for safety focus, regulatory discipline, and technical rigor.

In summary, the NRC should not be in position of choosing a result and then crafting a justification for it through the expanded use of qualitative factors, as is the case in the examples we have cited. Undermining NRC precedent and established processes in pursuit of matters lacking safety significance puts at risk the credibility of the NRC's tremendous progress in implementing post-Fukushima safety enhancements. To date, the NRC has largely focused on items of highest safety benefit. It is our hope that the Commission will strengthen its resolve in this respect.

Please provide responses to the attached questions no later than July 31, 2015. Please contact Annie Caputo at 202-224-6176 with any questions.

Sincerely,

James M. Inhofe
Chairman
Committee on Environment and Public Works

Shelley Capito
Chairman
Subcommittee on Clean Air and Nuclear Safety

David Vitter
United States Senator

John Barrasso
United States Senator

Mike Crapo
United States Senator

John Boozman
United States Senator

Jeff Sessions
United States Senator

Deb Fischer
United States Senator

M. Michael Rounds
United States Senator

QUESTIONS

1. The NRC staff actions cited in this letter are inconsistent with Commission direction regarding the use of qualitative factors. How will the Commission ensure that agency staff will adhere to its instructions in the future, on these and any other matters?

2. In the Staff Requirements Memorandum for SECY 14-0087, the Commission directed the staff to revise guidance regarding the use of qualitative factors and to provide the Commission with a detailed plan and schedule for doing so. However, in the Containment Protection paper, the NRC staff cite NUREG/BR-0058 which is dated September of 2004. This appears to be the same regulatory guide that the Commission directed the staff to update. Please provide a copy of the plan and schedule to update this guidance, and a list of all pending regulatory proposals that continue to rely on this outdated guidance.

3. If the Commission will no longer require regulatory changes to provide a significant safety improvement in keeping with the Backfit Rule, is there a new threshold for discerning whether proposed regulatory changes are warranted? If so, please provide a description.

4. Does the Commission expect agency staff to continue following the NRC's Safety Goal Policy Statement? If not, what is the new policy?

5. On May 21, 2015, NRC staff testified in a Commission meeting that the staff is considering incorporating the use of qualitative factors into the Reactor Oversight Process, particularly for the significance determination process. Please describe the process and schedule for making such a change including opportunities for public engagement and the Commission's role in decision-making.

6. The Near-Term Task Force reported shortcomings in the industry's implementation of SAMGs following Fukushima. Has the industry corrected those flaws that were identified?

7. In assessing the safety benefits derived from the Containment Protection paper's Alternative 3, the NRC staff assumed the industry DOES NOT utilize SAWA/SAWM to comply with Order EA-10-109. However, when assessing the costs of CPRR Alternative 3, the NRC staff assumed the industry DOES utilize SAWA/SAWM to comply with Order EA-10-109 and thus considered the cost of Alternative 3 to be minimal. Please explain this inconsistency. Is this type of inconsistency common in the NRC's regulatory analyses? If so, please describe the three most recent examples with justifications for using this approach.

8. The NRC's Committee to Review Generic Requirements (CRGR) has a stated mission to: "...recommend either approval or disapproval of the staff's proposed backfits, and to guide and assist the NRC's program offices in implementing the Commission's backfit policy." Describe the CRGR's role in ensuring adherence to the Backfit Rule and the Commission's direction regarding the use of qualitative factors as laid out in SECY 14-0087.

9. Did the CRGR review the staff's Mitigating Strategies and Containment Protection proposals prior to their transmission to the Commission? If not, why not? If so, what did the CRGR conclude in its review?