



Risk-informed Process for Evaluations



Agenda

- Communicate NRR's issuance of the RIPE Temporary Staff Guidance (TSG), TSG-DORL-2021-01, Revision 3, “Risk-Informed Process for Evaluations,” to reflect staff's observations and best practices from the first RIPE review.
- Discuss NRC staff’s preliminary assessment of NEI’s recommendations to revise the RIPE criteria to enhance the use of RIPE.
- Present and discuss options for addressing NEI's recommendations and updating the “Guidelines for Characterizing the Safety Impact of Issues” (SIC).

Status of TSG Revision



- The TSG revision to incorporate staff feedback from the first review using RIPE was made publicly available on September 20, 2023 (ML23122A014).
- The TSG revision does not address NEI's recommendations to enhance the use of RIPE.

Content of TSG Revision

- Provide additional information regarding defense-in-depth (DID) and safety margins review for very low safety significance issues.
- Expand timeline for providing the no technical objection (NTO) review and offer the flexibility to increase NTO review hours, for complex submittals, with supporting justification and BC approval.
- Clarify that the NTO review includes reviewing the special circumstances for exemptions and that the DORL PM is responsible for addressing the special circumstance claim. The staff may consult with OGC as needed.
- Clarify that the NTO review can be accompanied by recommended SE input from the technical staff for DRA consideration.
- Add information about staff's review of performance monitoring.



NEI Feedback

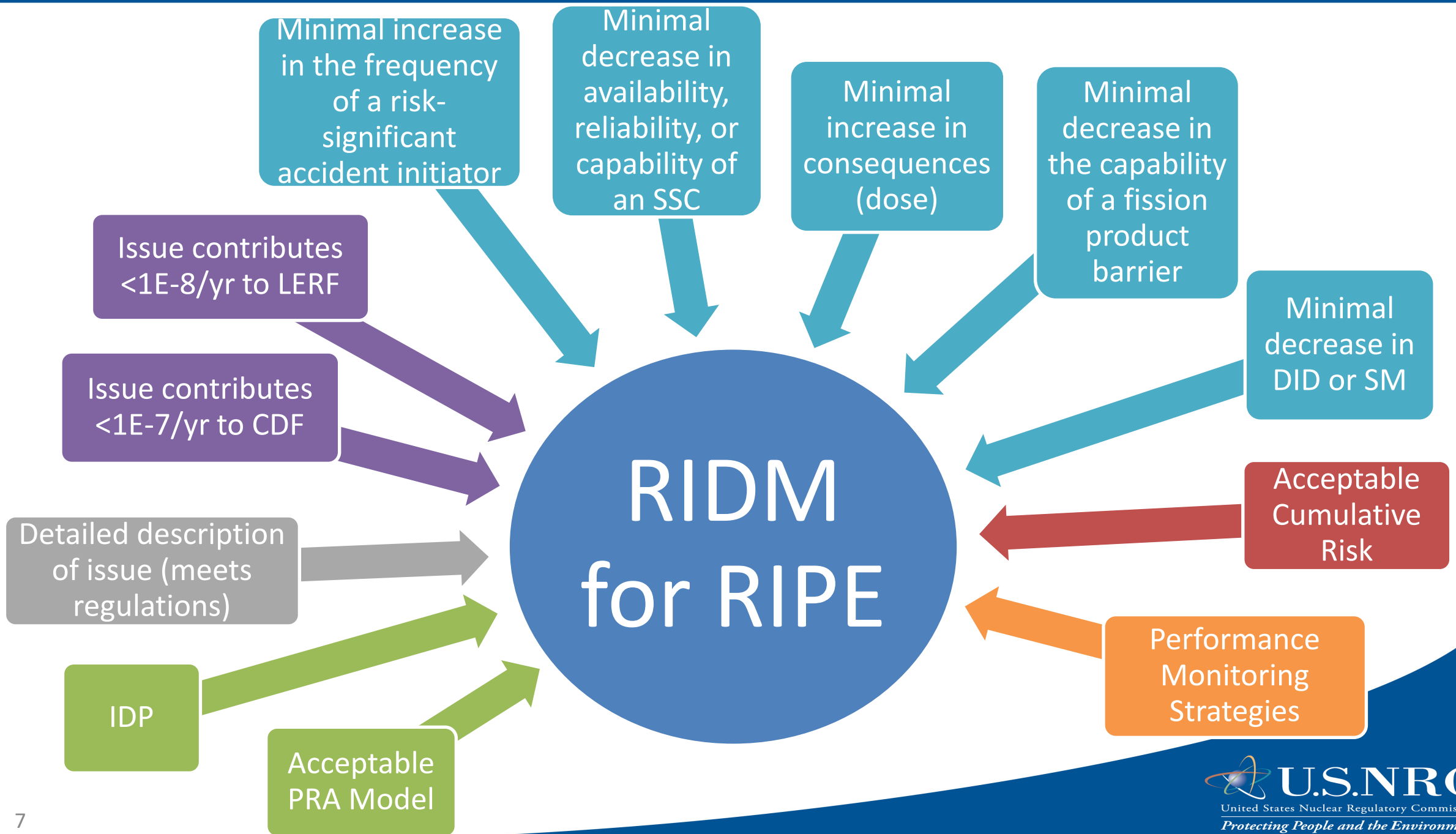
- NEI submitted feedback on RIPE by letter dated April 19, 2023 (ML23163A048).
- NEI stated that inherently very low safety significance issues are often not suited to modeling using PRA.
- NEI recommendation #1 was to revise of the risk thresholds as follows:
 - The issue contributes less than 5×10^{-7} /year to CDF.
 - The issue contributes less than 5×10^{-8} /year to LERF.
- NEI recommendation #2 was to not treat the risk threshold as pass/fail criteria consistent with the guidance in RG 1.174, Section 2.5.



Staff Assessment of NEI Feedback

RIPE Background

- RIPE was developed to apply risk insights to the review of licensing actions, consistent with the principles of risk-informed decision making (RIDM) in RG 1.174, Revision 3, “An Approach for Using Probabilistic Risk Assessment in Risk Informed Decisions on Plant-Specific Changes to the Licensing Basis” (ML17317A256).
- The principles of RIDM are
 - ensuring the change meets current regulations unless related to an exemption,
 - ensuring the change is consistent with defense-in-depth (DID) philosophy,
 - ensuring the change maintains sufficient safety margins (SM),
 - ensuring changes in risk are small, and
 - using performance measurement strategies.



Staff Assessment of NEI Feedback

Current Guidance

Risk thresholds in RIPE:

- The issue contributes less than 1×10^{-7} /year to core damage frequency (CDF).
- The issue contributes less than 1×10^{-8} /year to large early release frequency (LERF).

Risk thresholds in RG 1.174

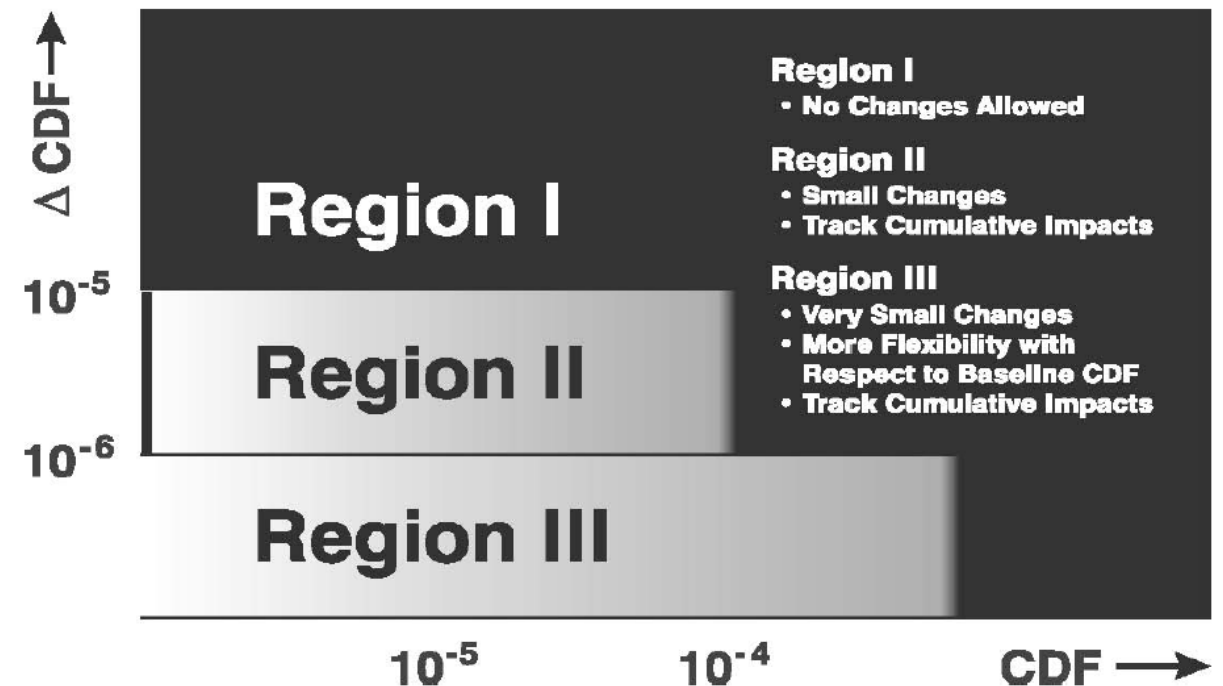


Figure 4 Acceptance guidelines* for core damage frequency

Staff Assessment of NEI Feedback

NRC Risk Metrics for Normal Work Controls

- NRC Enforcement Manual, Appendix F, “Notices of Enforcement Discretion,” (NOEDs) ([ML19193A023](#)) includes the use of risk insights when determining whether to grant enforcement discretion and states the following:

The numerical guidance for acceptance was established to augment qualitative arguments that continued operation of the plant during the period of enforcement discretion will not cause risk to exceed the level determined acceptable during normal work controls and, therefore, there is no net increase in radiological risk to the public.
- The numerical acceptance thresholds for NOEDs in Appendix F are that the increase in risk during the period of enforcement discretion must be less than or equal to $5E-7$ for CDF and $5E-8$ for LERF.

Preliminary NRC Staff Assessment of NEI Recommendation #1

- NEI's recommendation to revise the risk acceptance criteria for RIPE to allow the use of RIPE if the issue contributes less than $5E-7$ /year for CDF and less than $5E-8$ /year for LERF is reasonable because:
 - applications submitted under RIPE will be reviewed by NRC staff in accordance with the principles of RIDM in RG 1.174, and
 - the new acceptance criteria are
 - indicative of a very small change in risk in accordance with RG 1.174, and
 - consistent with an acceptable increase in risk associated with normal work controls for which there is no net increase in radiological risk to the public per NRC guidance.
- Increasing the risk acceptance criteria for RIPE should be accompanied by increased flexibility in the review timeline/resources.

NRC Guidance Related to NEI Recommendation #2

- RG 1.174 provides the following guidance on comparing the PRA results with the risk acceptance guidelines:

In the context of integrated decisionmaking, the acceptance guidelines should not be interpreted as being overly prescriptive. They are intended to give a numerical indication of what is considered acceptable. The lines between the regions are intentionally blurry to indicate that the NRC has discretion when making licensing decisions involving the risk acceptance guidelines.
- RG 1.174 makes it clear that the risk acceptance guidelines are only one aspect of RIDM and notes that exceeding the risk acceptance guidelines requires NRC review to ensure other defenses are appropriate to offset the increase in risk.

Preliminary NRC Staff Assessment of NEI Recommendation #2

- NEI's recommendation to revise the pass/fail risk criteria for RIPE is not recommended because it could result in added complexity and delays in the review process that do not align with the goals of RIPE.
- However, minor deviations from the RIPE acceptance criteria can be considered for review under RIPE on a case-by-case basis, consistent with other NRC guidance.

Options for Addressing NEI Feedback

- NRC to update SIC and TSG to incorporate any potential changes based on NEI feedback
 - Availability of NEI RIPE Guidance Document
 - Other?
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- After several RIPE reviews, industry guidance will be considered for endorsement using the Regulatory Guide Process.

Questions/Feedback

