

Risk-Informed Process for Exemptions

Problem Statement

Compliance issues can arise that are of minimal safety impact but require costly modifications to resolve.

Recommendation

The Risk-Informed Process for Exemptions (RIPE) can be used to address compliance issues that have minimal safety impact using existing regulations. RIPE will leverage existing risk-informed initiatives to support a streamlined NRC review process for exemptions.

Goals

- Focus NRC and licensee resources on the most safety significant issues.
- Address compliance issues in an efficient and predictable manner consistent with our Principles of Good Regulation.
- Leverage existing regulations and risk insights.
- Incentivize the further development and use of probabilistic risk assessment and risk-informed applications.

Challenges

- Developing a streamlined licensing process requires modifying LIC-103, “Exemptions from NRC Regulations.”
- Development of an eventual regulatory guide will be resource intensive and time consuming.

Figure 1: Risk-Informed Process for Exemptions Overview



Background

There are several new developments that make establishing a risk-informed process for exemptions (RIPE) ripe for the undertaking. Foremost is the expanded use of risk-informed decision-making by both licensees and the NRC through risk-informed applications and other initiatives. This has led to improvements in licensee's site-specific probabilistic risk assessment (PRA) information, which can be leveraged to support a streamlined exemption process. RIPE can be used to defer or eliminate compliance issues with a minimal safety impact using existing regulations, such as the following:

- 10 Code of Federal Regulations (CFR) 50.12 (a)(2)(iii), "Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated."
- 10 CFR 50.12 (a)(2)(iv), "the exemption would result in benefit to the public health and safety that compensates for any decrease in safety that may result from the grant of the exemption."

RIPE leverages current regulations and risk initiatives to allow licensees to justify plant-specific exemptions using a streamlined NRC review process. The streamlined process would be available to licensees that have a robust PRA and integrated decision-making panel (IDP), as demonstrated by NRC approval of both of the following:

- Technical Specification Task Force (TSTF) Traveler 505, "Risk Initiative 4b - Risk Informed Completion Times," and
- 10 CFR 50.69 "Risk-informed Categorization and Treatment of Systems, Structures and Components of Nuclear Power Plants."

RIPE uses the IDP to assess the safety impact of issues using both quantitative and qualitative risk insights consistent with Regulatory Guide 1.174 "An Approach for Using Probabilistic Risk Assessment In Risk-Informed Decisions On Plant-specific Changes to the Licensing Basis," (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100910006). Once the plant-specific assessment is completed, the licensee would then submit the supporting information from the IDP to the NRC to support a streamlined exemption process. The exemption would use a standard template to facilitate the review and the licensee would have to provide sufficient information to identify the regulation from which they are requesting to be exempt and what risk mitigation actions were put place to ensure the public health and safety are maintained. NRC staff would then review the submittal and approve or disapprove the request.

The major benefits of this process enhancement include:

- Focus NRC and licensee resources on the most safety significant issues
- Address compliance issues in an efficient and predictable manner consistent with our Principles of Good Regulation
- Leverage existing regulations and risk insights

- Incentivize the further development and use of PRA and risk-informed applications

RIPE builds on existing industry guidance that was provided as part of the NRC's initiative to prioritize regulatory issues, known as the risk prioritization initiative (RPI). RPI guidance was demonstrated in several RPI pilot cases to assess the significance of various issues (see "Summary of Staff's Observation of Industry Demonstration Pilot Activities of NEI Draft Guidance for Prioritization and Scheduling Implementation," dated October 31, 2014, at ADAMS Accession No. ML14302A269).

Figure 1 provides an overview of the RIPE process. Figure 2 illustrates the major parts of the RIPE process and how the process would be implemented. Figure 3 illustrates the overview of the safety impact characterization process that would be conducted by the licensee.

Figure 2: Implementation of the Risk-Informed Process for Exemptions

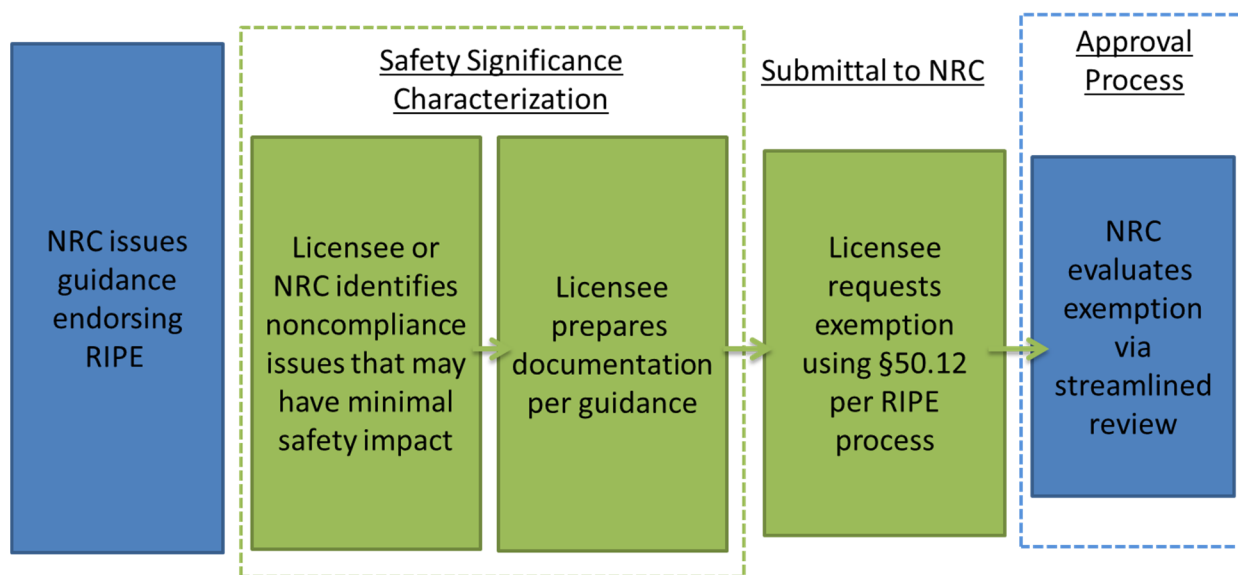


Figure 3: Safety Impact Characterization Detailed Process Overview

