U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Public Workshop on Technology Inclusive Risk Metrics for Advanced Reactors

NRC Working Group on Technology Inclusive Risk Metrics

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Periodic Advanced Reactor Stakeholder Meeting
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NRC Considering Needs for Non-LWR Risk Metrics and Reliability Data

In 1990, the Commission established three risk metrics for new reactors and associated quantitative goals:

- **Core Damage Frequency (CDF) < 1×10^{-4}/year** – A measure of overall safety performance in prevention of severe accidents
- **Large Release Frequency (LRF) < 1×10^{-6}/year** – A measure of prevention of significant offsite consequences
- **Conditional Containment Failure Probability (CCFP) < 0.1** – A measure of the capability of design to mitigate a severe accident

Traditional risk metrics, e.g., CDF, have been used effectively in NRC's risk-informed decision-making processes

- *May not be applicable to all advanced reactor designs*

SRM SECY-23-0021 provides direction on applicant proposed risk metrics

"The staff should revise draft 10 C.F.R. 53.220 to specify that applicants must propose a comprehensive plant risk metric (or set of metrics) …"

Need to consider alternative risk metrics that:

- Are applicable to Non-LWR designs
- Support NRC licensing and regulatory processes

Public Workshop on Risk Metrics and Reliability Data for Non-LWRs

- Summarize NRC staff's ongoing efforts on risk metrics and supporting reliability data
- Gather input from stakeholders
- Consider how risk metrics can be applied to:
  - Licensing
  - Oversight
  - License amendment requests
  - Other risk-informed regulatory processes
- Contact if interested in presenting your thoughts on risk metrics
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- Planning to schedule workshop, tentative mid-July 2024