

NUREG-1855 “Guidance on the Treatment of Uncertainties Associated with PRAs in Risk- Informed Decisionmaking”

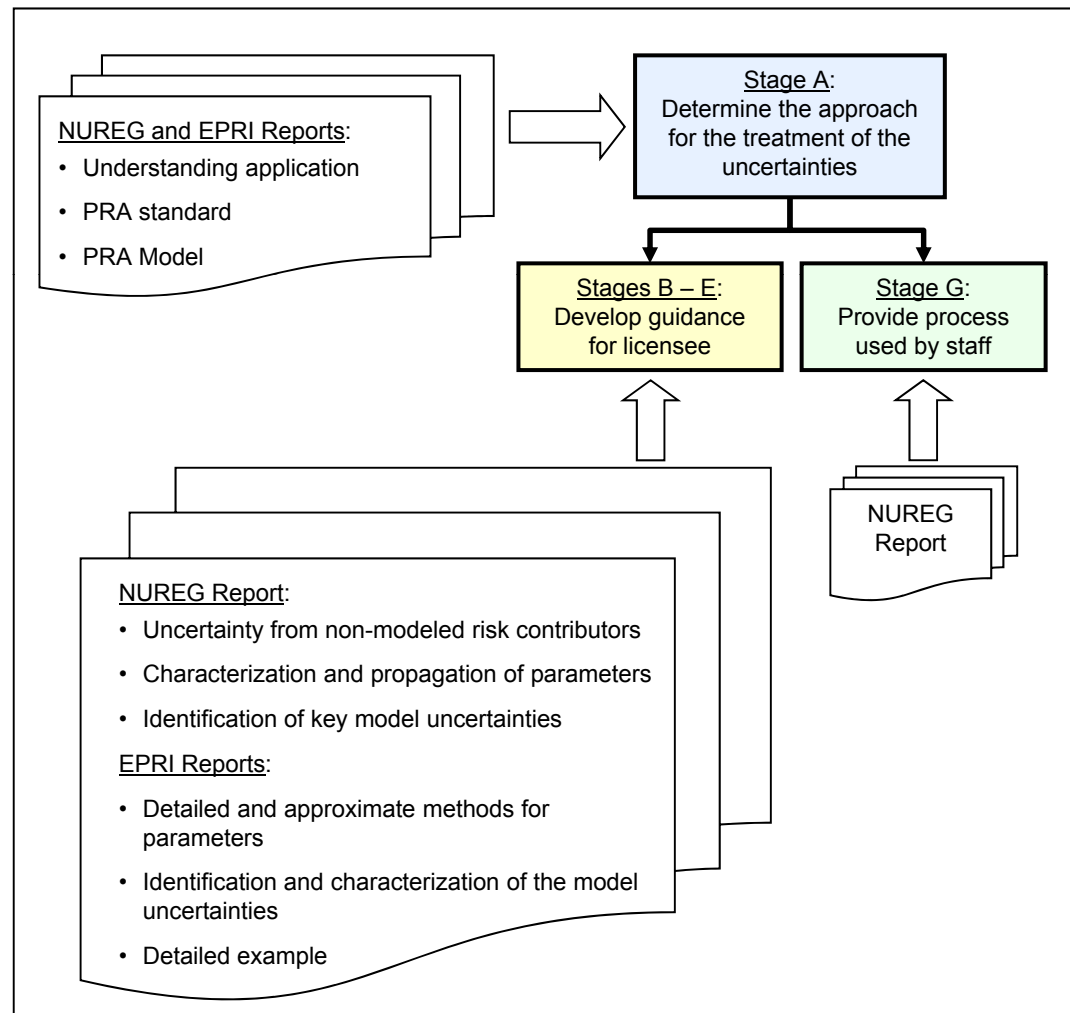
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November 16, 2014

Objectives

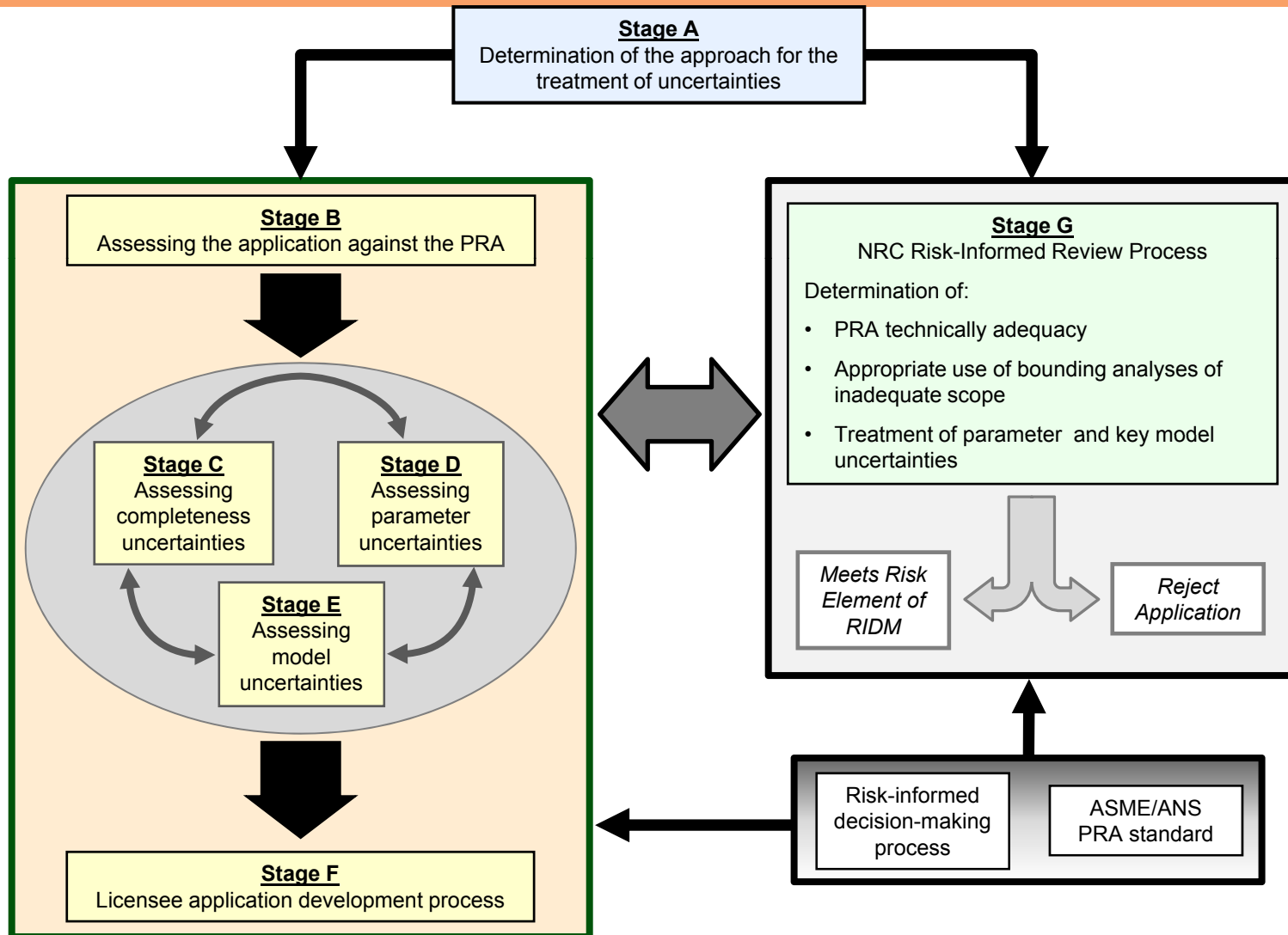
- Provides guidance on how to treat uncertainties associated with PRAs used by a licensee or applicant to support a risk-informed application to NRC.
- Specifically, guidance is provided with regard to:
 - identifying and characterizing the uncertainties associated with PRA
 - performing uncertainty analyses to understand the impact of the uncertainties on the results of the PRA
 - factoring the results of the uncertainty analyses into the decisionmaking

Relationship to EPRI

- Collaborative effort with EPRI



Guidance Comprised of Seven Stages



STAGE A — THE APPROACH FOR TREATING RISK ANALYSIS UNCERTAINTIES

- This section provides guidance to both the licensee and the Nuclear Regulatory Commission (NRC) staff on determining whether the approach for treating probabilistic risk assessment (PRA) uncertainties, as provided in this NUREG, should be used for the risk-informed activity (i.e., the decision) under consideration.

Stages B through F (Guidance to Licensees) (1 of 2)

Stages B through F (Guidance to Licensees) (2 of 2)

- Stage E: to ultimately determine whether (and the degree to which) the risk metric estimates challenge or exceed the quantitative acceptance guidelines due to sources of model uncertainty and related assumptions
- Stage F: to justify the strategy used to address the key uncertainties that contribute to risk metric calculations that challenge application-specific acceptance guidelines.
 - To help ensure that adequate justification is provided for the acceptability of the risk-informed application. Further, the guidance for this stage helps ensure that the argument for adequate justification is included in the documentation clearly and concisely

Stage G — NRC Risk-informed Review Process (1 of 2)

- To describe the process used by the staff for determining whether a licensee's risk-informed application demonstrates an acceptable treatment of uncertainties and that the proposed application represents an acceptable risk impact to the plant.
- The staff seeks to answer the following general questions:
 - Is the scope and level of detail of the PRA appropriate for the application?
 - Is the PRA model technically adequate?
 - How do the risk results compare to the acceptance guidelines?
 - How do parameter and model uncertainties impact the risk results?
 - Is the acceptability of the application adequately justified?

Stage G — NRC Risk-informed Review Process (2 of 2)

