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Overview of Current LTCC Methods and Proposed Path Forward to Address LTCC Methods

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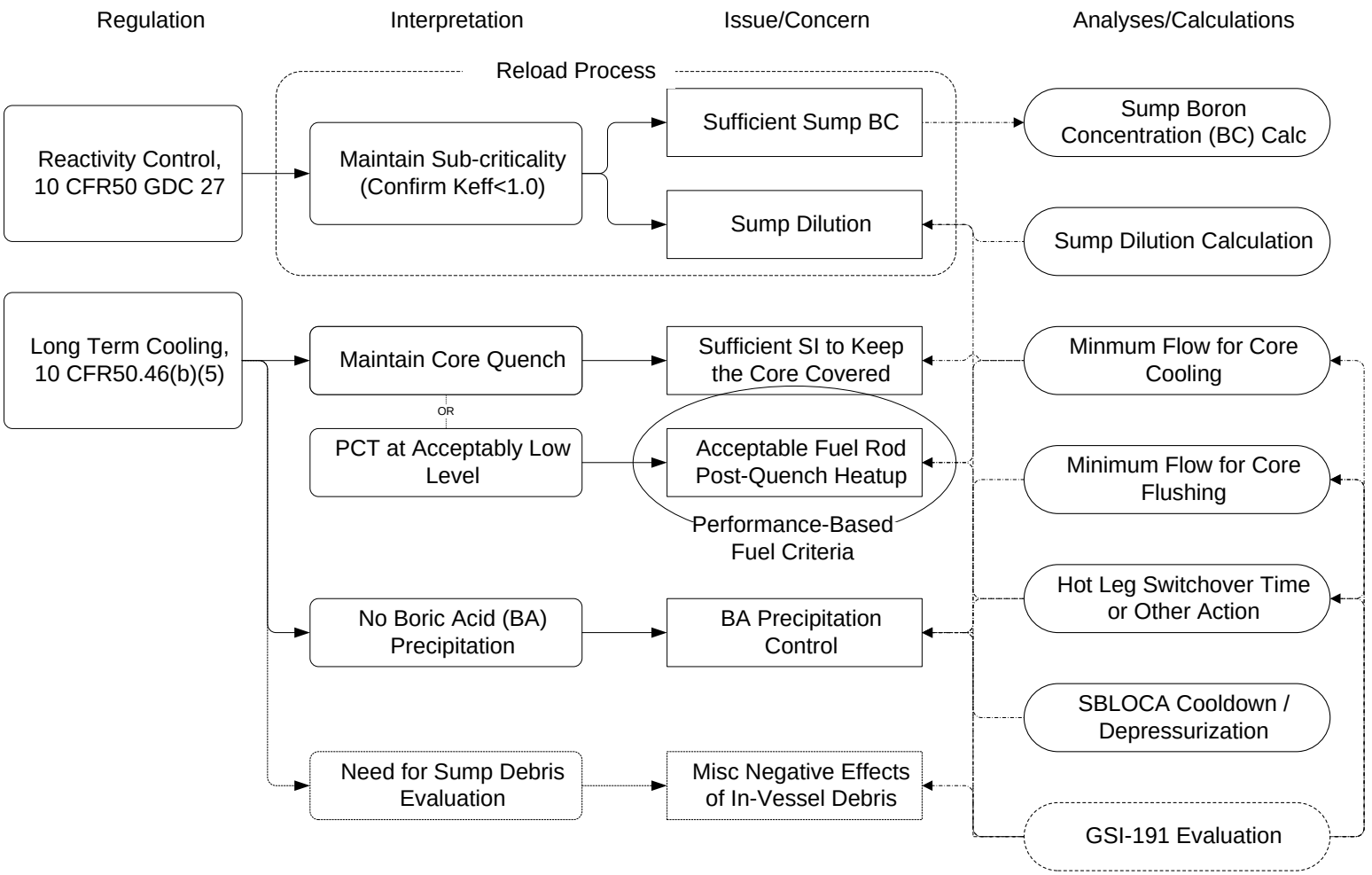
PWROG Current Activity

- PWROG is considering a project to help the industry clarify LOCA LTCC
- If the new rule does not change the expectations for non-debris associated LTCC criterion, the project would be independent of the specific rule
- Project timeline is not intended to align with the rule issuance or the initial 50.46c compliance demonstration
- Project is in early phases of development.

Current LTCC Methods Status

- LTCC is addressed with a large number of analyses using historically acceptable methods and approaches
  - Most methods were described generically but the approach used for each plant were reviewed on a plant-specific basis
  - Variations in analysis inputs different from plant-to-plant but each shown to be acceptable based on the 50.46 interpretations
  - “Acceptable” nature of LTCC analysis consistent with new rule statements of consideration
- Issues with the applicability of Appendix K to the post-reflood period have been raised previously and within the comments on the new rule

Example of Current LTCC Methods



Proposed Industry Paper Project

- To aid in the demonstration of compliance to the LTCC criteria, for both the current and new rule, PWROG is considering to standardize the scope and methods
  - Similar in style to Appendix K
  - Describe what comprises the regulated 50.46/50.46c LTCC scope
  - Define the high level requirements and assumptions
  - Summarize typical analyses that are historically included and the specific requirements for some of these
    - LTCC analyses which may use different inputs are performed and reviewed on a plant-specific basis
    - An example of the major types of analyses included for a Westinghouse-style plant are shown on next slide

Required and Acceptable Features

- Appendix K defines the required and acceptable features of an evaluation model
- LTCC guide would describe the overall required and acceptable features defined as appropriate for assessing acceptability of the LTCC scenario (e.g. decay heat uncertainty with +/- defined)
    - Overheating or scenarios where max power is limiting uses + uncertainty
    - Overcooling or scenarios where min power is limiting uses - uncertainty
- LTCC guide should include required and acceptable features for major/typical LTCC analysis, for example
    - BAP required and acceptable features (e.g. mixing region, solubility limit, etc.)

Going Forward Strategy

1. Develop an industry paper that identifies the issues that need to be addressed for LTCC and the requirements and assumptions for LTCC models to address these issues
   - Debris related issues will be addressed under GSI-191
   - Engage BWRs in development of industry document
2. NRC endorse or reference in a LTCC Regulatory Guide the industry paper (similar to what was done for 50.59)

Going Forward Strategy

- Advantages of NRC Endorsed Industry Document include:
  - Clarify unspecific LTCC requirements which may need to be done regardless of the new rule.
  - Issues identified in the Comments on 50.46c LTCC section can be addressed in this document.
  - Engage NRC for concurrence on LTCC definition and compliance requirements (both current and future rule)
  - Standardize LTCC submittals across the industry
    - Assist Licensee and Staff in the development and review of submittals that involve LTCC
    - Reduce RAIs for submittals that impact LTCC

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