Structure, System, and Component Categorization Results

Tim Tovar

Manager, Design Integration

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Nonproprietary

NuScale Power™

Agenda

- Purpose
- Overview of the Preliminary Structure, System, and Component Categorization report
  - Methodology review
  - Application of importance measures
  - Results and examples
- Summary and next steps

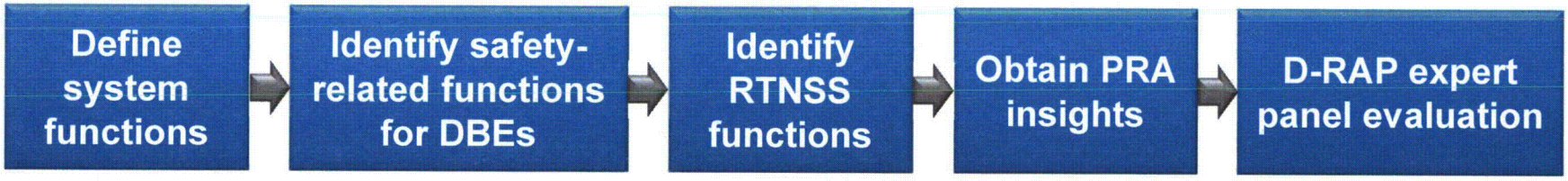
Purpose

- Obtain initial feedback about methodology and results
- Discuss application of importance measures to the NuScale design
- Understand NRC application of SSC categorization to design-specific review plan development

Report Summary

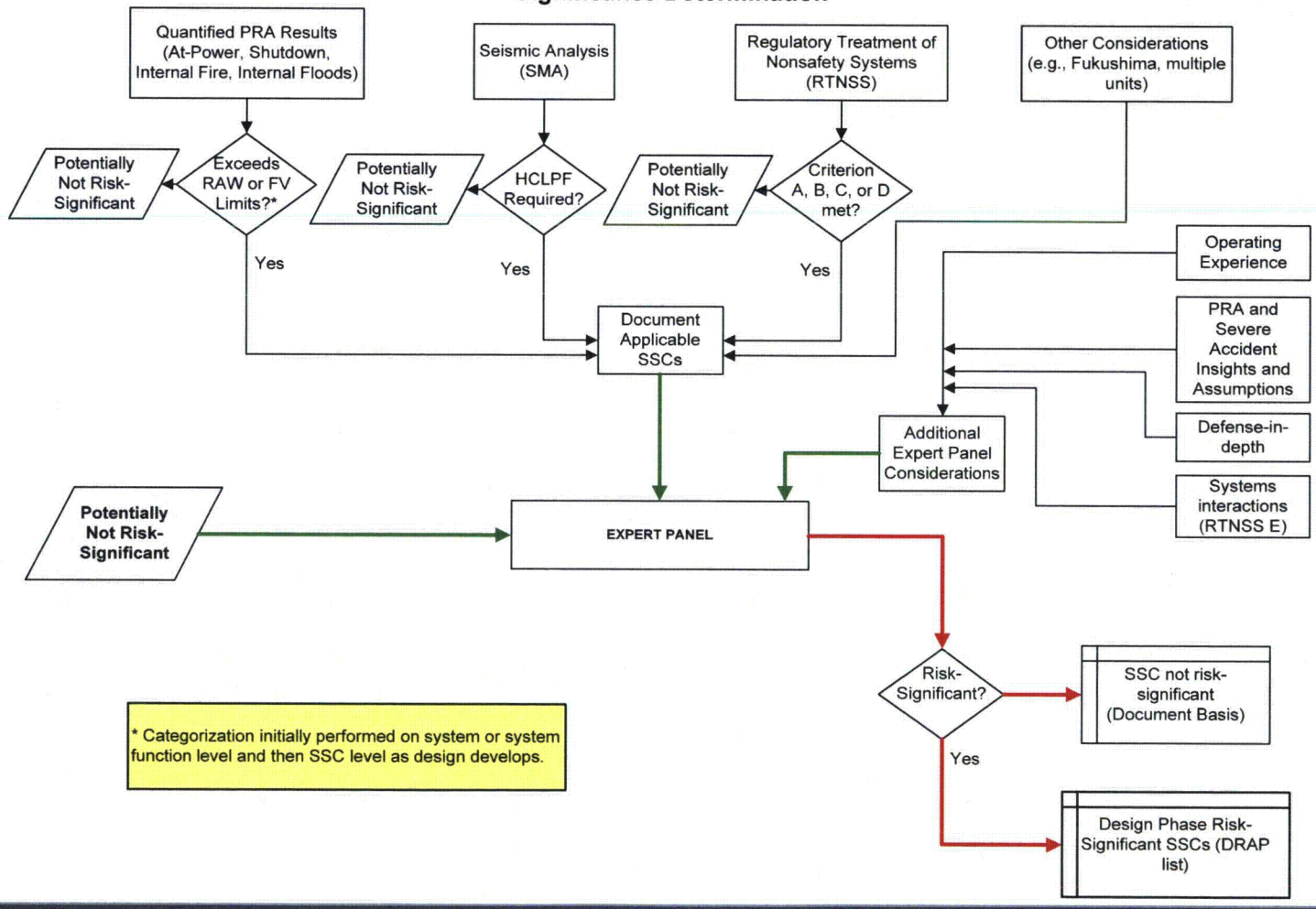
- Introduction
- Methodology
  - Safety-related SSCs
  - Nonsafety-related SSCs
  - Categorization of SSCs
  - Risk analysis approach
  - Risk analysis metrics and thresholds
  - Risk results
- SSC categorization–preliminary results

Review NuScale Methodology

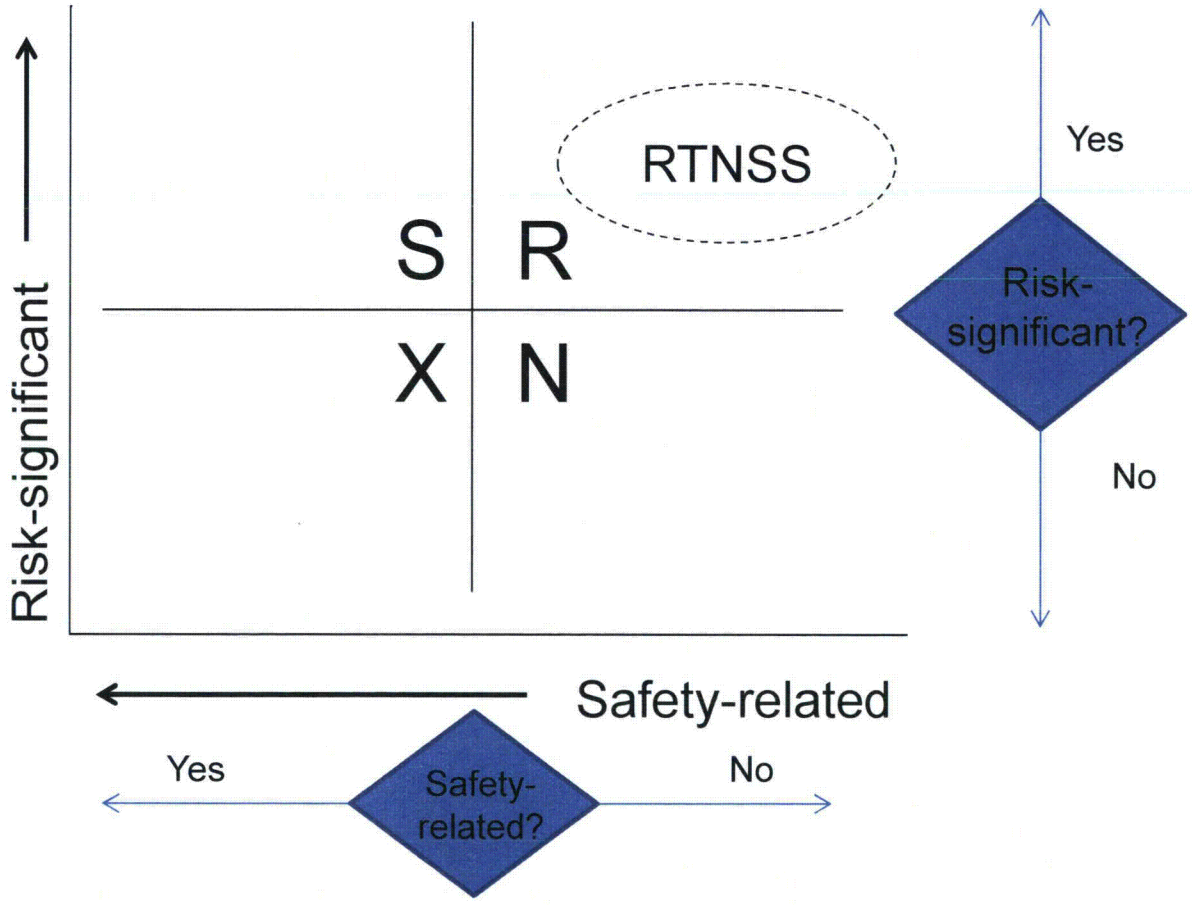


Design Reliability Assurance Program

NuScale Design Reliability Assurance Program (D-RAP) Process for SSC Risk-Significance Determination



SSC Categorization Results



Risk Achievement Worth Threshold

Risk Achievement Worth (RAW)

- Industry guidance from NEI 00-04 premised on much higher core damage frequencies (CDFs) – overly conservative for NuScale use
  - Component-level values versus system values currently used by NuScale
- Regulatory Guide 1.174 cites delta-CDF of less than 1E-6/year as not risk-significant
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RAW Evaluation Results

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Results: D-RAP Spreadsheet

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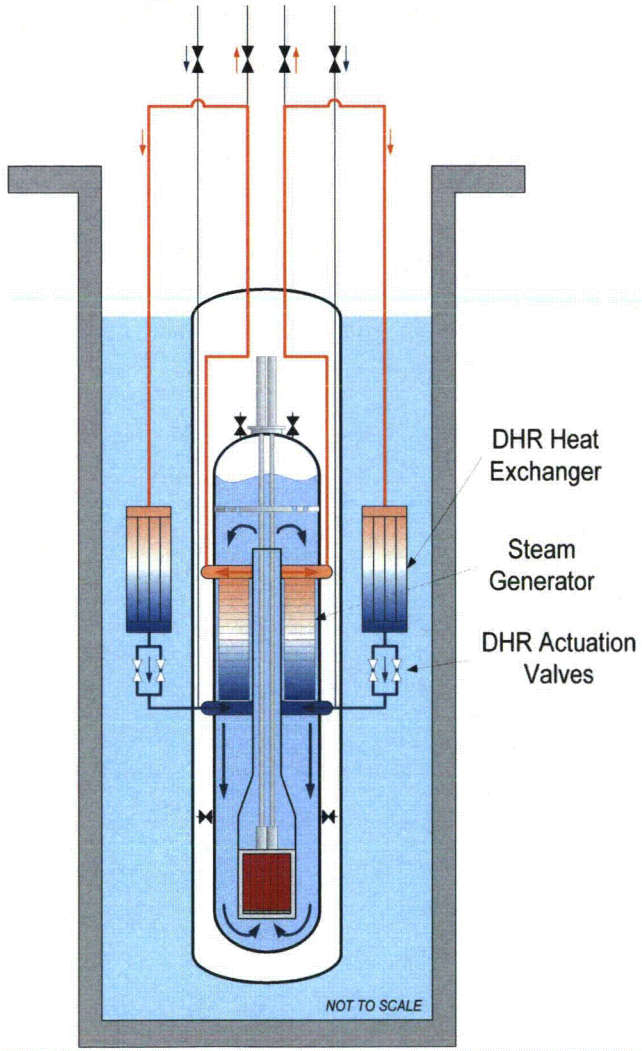
Results: Decay Heat Removal System



Results: Decay Heat Removal System

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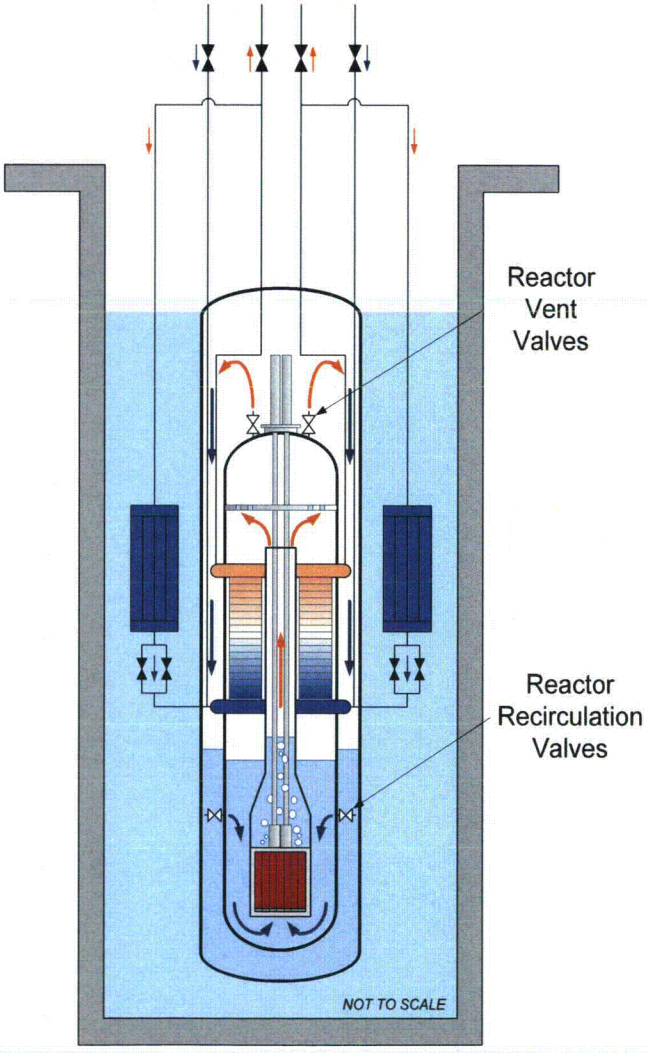
Results: Emergency Core Cooling System



Results: Emergency Core Cooling System

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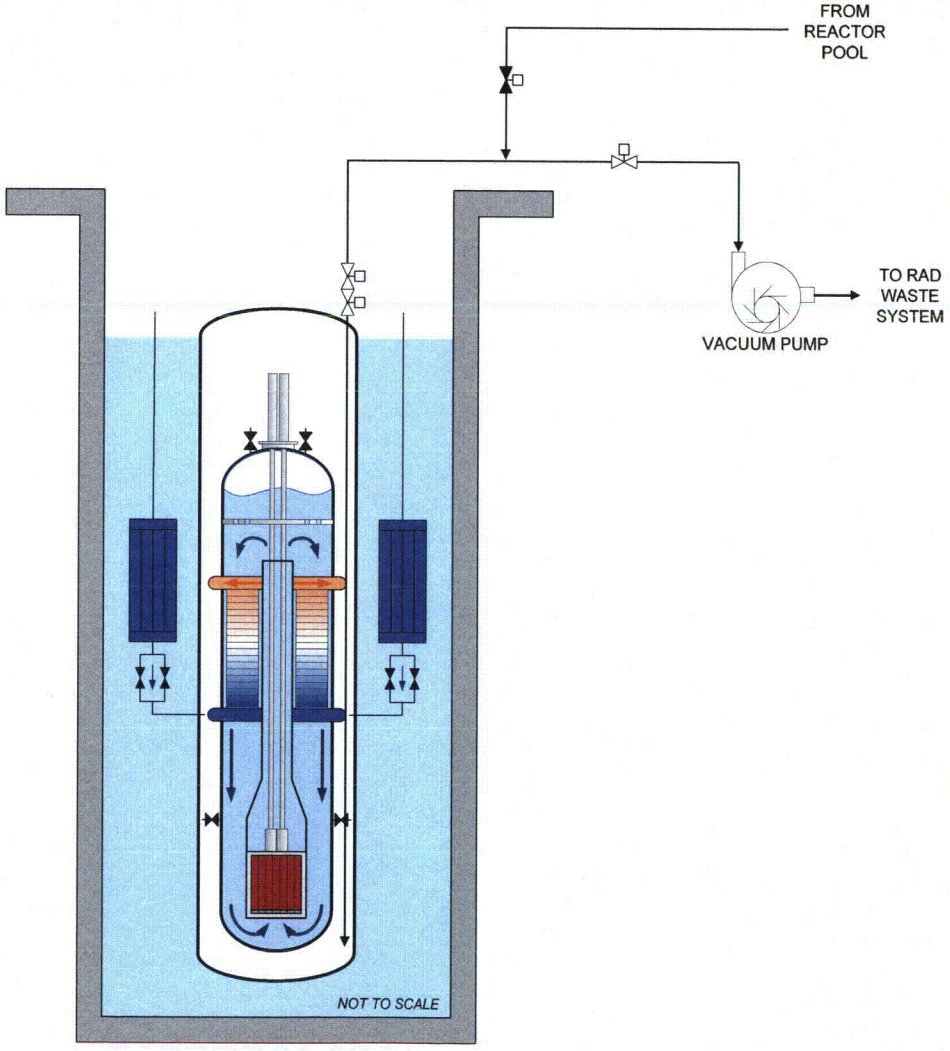
Results: Containment Evacuation System



Results: Containment Evacuation System

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Results: Chemical Volume Control System

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Results: Chemical Volume Control System

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Summary and Next Steps

Summary:

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Next Steps:

- Provide system descriptions as part of design-specific review standard development
- Provide report updates
- Continue classification to the structure and component level
- Continue importance measure discussion