FILTERS AND FILTERING STRATEGIES

Industry Comments on SECY-12-0157

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Overall Industry Approach

- Stepped back from filter/no filter question
  - What is the best way to manage a severe core damage event in a BWR Mark I/II?
- Integrated view of plant scenarios, severe accident response, and uncertainties
  - EPRI report highlighted both the good and the bad
- Integrated view essential
  - 50.54(hh)(2) vs. FLEX
- BWROG table top pilot provided a real application

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Industry Position

- Industry supports filtration of radionuclides in BWR Mark I & II containments to mitigate land contamination
- Performance-based approach

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Performance-Based Approach

- Best approach to enhance public health and safety and protect the environment.
- Imposing filters will have unintended consequences, including moving attention away from managing containment integrity and managing the source-term.
- How the filtering issue is decided can affect the stability of future regulatory decisions

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Performance-Based is Best Approach

- Focuses the response to a severe accident on managing the accident and containment integrity.
- Greater defense-in-depth for the containment function than other options.
- These actions also aximize retention of radionuclides in containment, filters radionuclides to a greater degree than external filtering systems alone, and provides additional tools to manage a severe accident.
- Licensees can appropriately tailor filtering strategies to their plants.

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Performance Based Approach
Filtering Strategies

- Reliable and effective methods for:
  - Water injection into containment to cool core debris
  - Pressure control to manage containment integrity
- Containment defense-in-depth enhanced by ensuring no breaches or bypasses.
- Significant radionuclide filtering inside containment, where structural integrity from external hazards is most assured.

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Filters are Wrong Starting Point

- Filters alone will provide only limited removal of radionuclides unless coupled with water injection and vent control
- Option 3 credits B5b for water injection, which cannot be assured to survive natural hazards.
- Filters are not passive
- External filters can have multiple, unintended consequences.
  - Rupture disk creates containment weak point
  - Natural hazard could fail filter and block vent

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Stability of Regulatory Framework

- Use of quantitative factors produces predicable, reliable, safety-focus decisions.
- Over-reliance on qualitative factors would set negative precedent and dilute focus on items truly important to safety.
- Qualitative factors have limited value
  - Subjects not amenable to quantitative analysis
  - Aid decisions when quantitative analysis “close”
- Option 3 quantitative analysis not close

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Next Steps

- Selection of performance-based approaches to filtering strategies (Option 4).
- Develop performance-based requirements through rulemaking.
- Impose requirements for severe accident capable vent by amending reliable hardened vent order (EA-12-050).
- The industry stands ready to participate with the NRC staff and other stakeholders in this regard.

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