Spent Fuel and Waste Science and Technology

GDSA Approach and Role of Generic Performance Assessment

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GDSA Role

- **GDSA Objective**

  – *Develop a disposal system modeling and analysis capability that supports the prioritization of Disposal Research (DR) R&D and the evaluation of disposal system performance, including uncertainty, for a range of disposal options (e.g., salt, argillite, crystalline, deep borehole). The system-level modeling capability will: integrate updated models of subsystem processes and couplings developed under this and other DR work packages; be used to evaluate DR R&D priorities; leverage existing computational capabilities (e.g., meshing, visualization, high-performance computing (HPC)) where appropriate; and be developed and distributed in an open source environment.*

- **Tasks (2 of 5)**

  – *Identify additional capabilities needed to advance the GDSA model framework to a robust PA model ready for application to a candidate site …. The GDSA group will work closely with other work packages as applicable in identifying these needs, determining what is required to sufficiently address them, and working to fulfill them by 2020.*

  – *Integrate subsystem models developed under other DR work packages into the GDSA-PA system model architecture ….*

GDSA Approach to PA Model Development

- ■ **Approach**
  - – Build generic models (e.g., salt, shale, granite) and exercise them
  - – Identify capability gaps
    - • Share findings (annual meetings, deliverables)
      - – GDSA model integration table, GDSA timeline table
    - • Seek input on gaps (annual meetings)
  - – Identify ways to fill gaps
    - • Seek ideas, models, etc., from other SFWST WPs
    - • Seek help filling gaps
  - – Prioritize potential actions based on…
    - • Importance to PA, feedback, level of effort, level of readiness, help offered
  - – Plan actions to fill the gaps
    - • Actions with partners
      - – Set up integration meetings to plan, develop, and implement
        - • E.g., Fracture Matrix Degradation Model (ANL, PNNL), Discrete Fracture Networks (LANL)
    - • Actions without partners
      - – Do what we can to fill the gap ourselves
        - • Sometimes these actions are placeholders for future models

Conclusion

We Need You!

- **We need you to …**
  - Help GDSA identify and prioritize capabilities to add
  - *Help GDSA develop and/or couple them*