Parking Lot

Neptune and Company, Inc.

Outline

- Identify technical presentations that could be used to support evaluation of Parking Lot issues
- Discussion of other Parking Lot issues
  - Other technical issues
  - Regulatory
  - Procedural
- Overview of overall approach to PA modeling

1. Long-Term Modeling

- Uncertainty predictions (convincingly)?
- Reasonableness of the simulations
  - Flooding and disruption within last 10,000 years (Gilbert shoreline reached Clive)
  - Modeling long-term climate characteristics
  - Near certainty of inundation
  - Dose
  - Site stability (wave energy)
  - Sedimentation

2. Performance Objectives

- Contamination transfer
- Exposure pathways
- Receptors and points of exposure
  - Technical/Scientific basis for existing rule
  - TEDE vs. other methodologies
  - Modeling approach / NCRP
- Intruder scenarios
- Engineered barriers, emanation and transport
- Waste site characteristics
- Stability of Disposal Site
- Adequacy of homogenized cover

Other Parking Lot Categories

3. Other considerations of public interest
4. QA and transparency
   - Dose calculations, uncertainty (see 2)
5. DRC guidance document development

Qualitative: Beyond 10,000 yr

"… For purposes of this performance assessment, the compliance period shall be a minimum of 10,000 years. Additional simulations shall be performed for the period where peak dose occurs and the results shall be analyzed qualitatively."

Utah Rule R313-25-8 2a Technical Analyses

Modeling

- Quantitative for 10,000 years
  - Dose assessment for identified receptors
    - Addresses site-specific scenarios
  - Risk assessment for uranium toxicity
- Qualitative interpretation of simulation results beyond 10,000 years
  - Peak activity at about 2.1 million years
  - Concentrations in lake water and sediments through time

Modeling Approach

- FEPs
- Conceptual Site Model
- Model structure
- Model specification (probabilistic)
- Run model – model results
  - QA
  - Model evaluation
  - Uncertainty and sensitivity analysis

A learning process: iterate as necessary

Modeling Components

- Probabilistic specification
- Modeling a specified disposal cell design
- Uncertainty Analysis to evaluate if decisions can be made or if uncertainty needs to be reduced
- Sensitivity Analysis identifies important parameters
- Collect more information if necessary

Modeling Components

- Evaluate other design options
  - Optimization
- Evaluate previously disposed waste