



U.S. Nuclear Regulatory Commission

Recent Monitoring Activities at the Savannah River Site Saltstone Disposal Facility

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Introduction

National Defense Authorization Act for FY 2005

- **Consultation**

- Section 3116 (a): Secretary of Energy, in consultation with NRC, determines that certain waste from reprocessing spent nuclear fuel is not high-level waste and may be disposed of as low-level waste if it meets criteria in Section 3116

- **Monitoring**

- Section 3116 (b): NRC shall, in coordination with State, monitor DOE disposal actions for assessing compliance with performance objectives in 10 CFR Part 61

Introduction

10 CFR Part 61 Subpart C Performance Objectives

- § 61.40 General requirement
 - Reasonable assurance of human exposure within limits in §61.41 – §61.44
- § 61.41 Protection of general population from releases of radioactivity
 - ALARA and annual dose limit of 25 mrem/year
- § 61.42 Protection of individuals from inadvertent intrusion
 - Protection of individual inadvertently intruding and occupying site after removal of active institutional controls
- § 61.43 Protection of individuals during operations
 - ALARA and, except for effluent release limit of 25 mrem/year, operations in compliance with Part 20
- § 61.44 Stability of disposal site after closure
 - Long-term site stability and no need for active maintenance after site closure

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Background NDAA Activities

- DOE provided both PA and draft WD to NRC (2005)
- NRC Technical Evaluation Report (TER) concluded reasonable assurance that DOE's planned activities would meet performance objectives if assumptions were verified during Monitoring (12/2005)
- DOE published Final WD and NRC entered Monitoring role (01/2006)
- NRC issued Monitoring Plan, Revision 0 (05/2007)
- DOE provided revised PA to NRC (11/2009)
- NRC reviewed revised PA, including 2 Requests for Additional Information to DOE (2009 – 2012)

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TER

- On April 30, 2012, NRC issued its Technical Evaluation Report with a conclusion that it did not have reasonable assurance that DOE's disposal actions would meet performance objective in §61.41, "*Protection of General Population from Releases of Radioactivity*"
- Due to the results in the TER, NRC issued Letter of Concern to DOE and the State of South Carolina

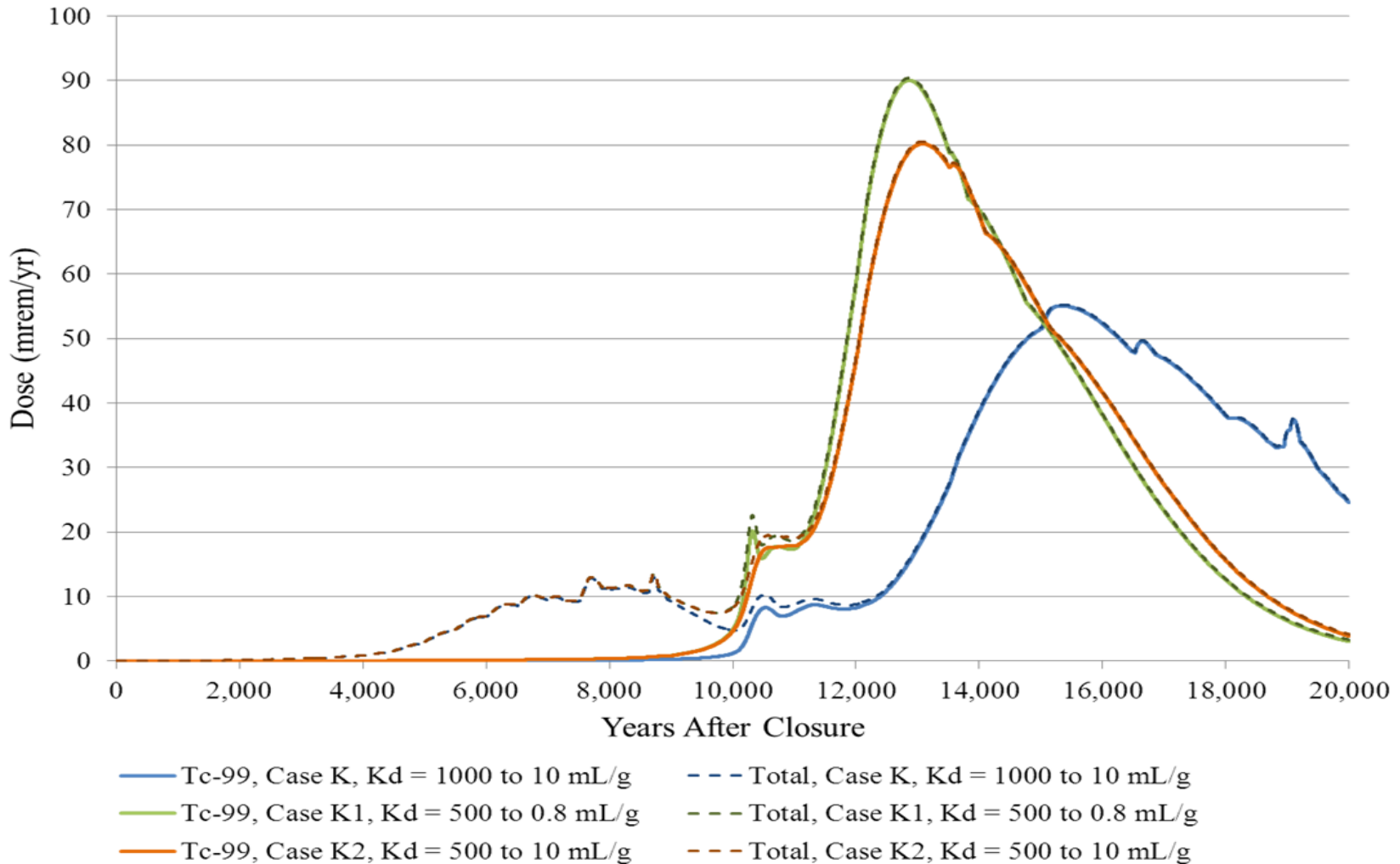
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TER Conclusions

- Based on DOE's results and NRC's own independent analyses, NRC could not conclude that the projected dose would meet the 25 mrem/yr limit within 10,000 years of site closure.
- The dose to an off-site member of the public from DOE's disposal actions is projected to be approximately between 25 mrem/yr and 100 mrem/yr
 - Large uncertainty in the timing of DOE's projected peak dose
 - Lack of model support

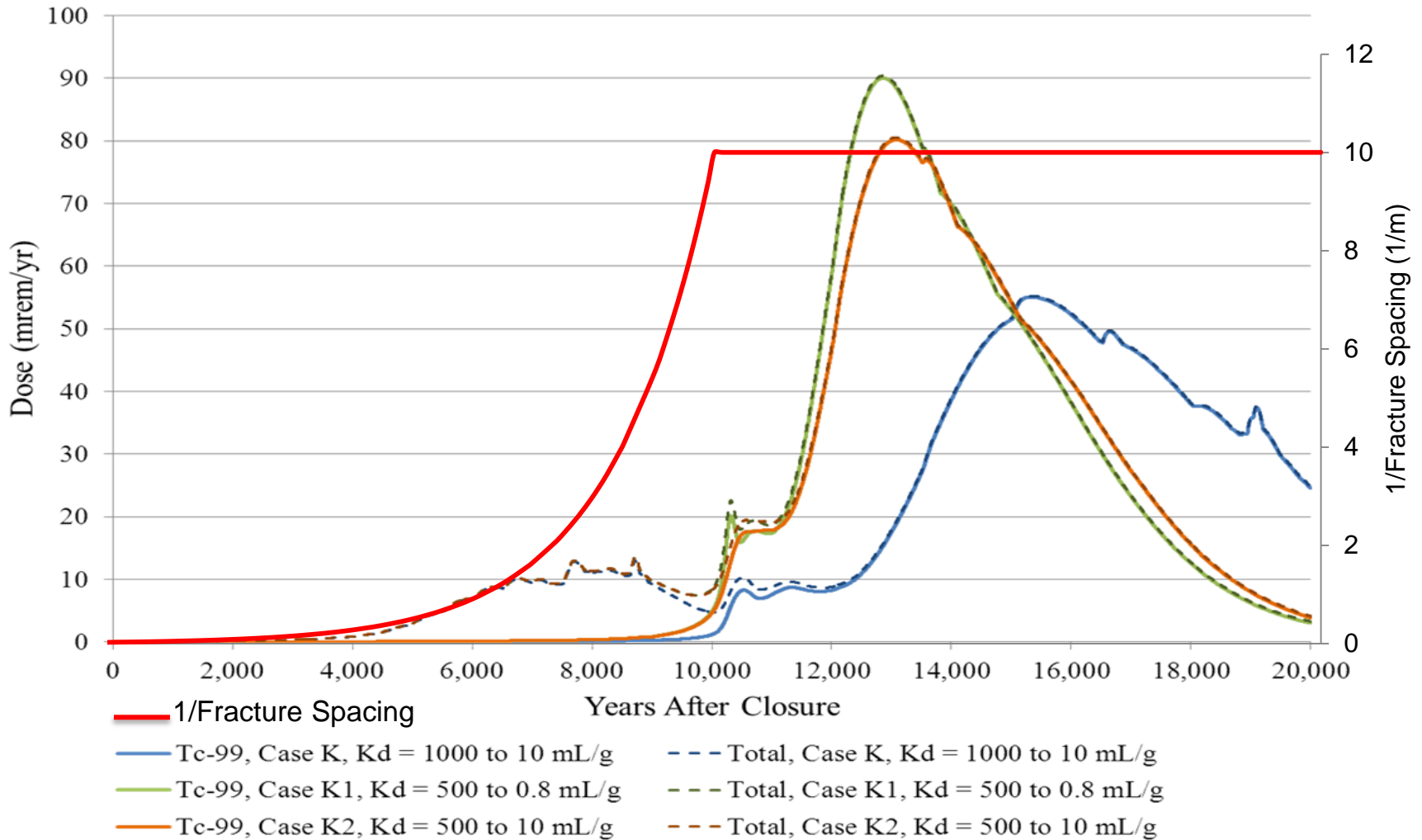
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NRC Technical Review



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NRC Technical Review



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Letter of Concern (Type IV) to DOE and SC

- The NRC staff is concerned that information collected during the monitoring period does not support DOE's compliance demonstration and sufficient information has not been provided to support many key modeling assumptions relied on for performance
- NRC is not stating that releases have occurred from SDF that could lead to annual doses that exceed the §61.41 limits

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Recent NDAA Monitoring Activities

- NRC Public Meetings
 - 05/07/12 (NRC-HQ)
 - 05/29/12 (NRC-HQ)
 - 08/06/12 (Aiken, SC)
- NRC Observation Visit to SDF on 08/07-08/12
- DOE submitted information in June 2012 and submitted a response to the TER and Letter of Concern in July 2012
- NRC's assessment (dated August 31) of June and July 2012 information and letter responding to DOE regarding July 12 Submittal
 - “The NRC staff has evaluated the information DOE provided about the revised inventory of Tc-99 in SDUs 2, 3, and 5 and finds the bases for the revision to be reasonable”

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Path Forward

- Continue NRC assessment of June and July 2012 information
- Continue collaboration with State and interactions with DOE
- Respond to DOE when, and as appropriate
- Revise Saltstone Monitoring Plan

Questions?