RADTRAN – Transportation and Environmental Reviews

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2019 RAMP User Group Meeting
October 31, 2019
Agenda

- Brief History of RADTRAN
- Regulations and Guidance
- RADTRAN Developments
- Closing Remarks
- Questions
Brief History of RADTRAN

• Development goes back to 1977
  – Funded by DOE and NRC
  – Several key NRC studies and reports
• Extensive use by DOE, NRC, and NRC Licensees & Applicants
• Last publicly available version was 6.02
• NRC obtained source code and other documents from DOE in 2018
• NRC developing a new GUI and working toward integration of RADTRAN into RAMP
Regulations and Guidance

• 10 CFR 51.52, Transportation of fuels and wastes
  – LWRs could apply Table S-4 else must perform a full description and detailed analysis

• 10 CFR 51.41, Requirement to submit environmental information
  – Provide such information as may be useful to aid in complying with Section 102(2) of NEPA
Regulations and Guidance (cont.)

• Existing NRC guidance
  – License Renewal: RG 4.2 S1 for Applicants; NUREG-1437 Vol 1 Add 1 for NRC Staff
  – LWR New Reactors: RG 4.2 for Applicants; NUREG-1555 for NRC Staff
  – Material Licenses: NUREG-1748 for both
  – Non-Power Reactors: NUREG-1537 with ISG for both
Regulations and Guidance (cont.)

• NRC developing guidance for advanced reactors (i.e., non-LWR)

• DOE Reference:
RADTRAN Developments

• With source code from DOE, created an executable of RADTRAN 6.02
  – Available to RAMP members
  – Batch mode
  – Documentation also available via RAMP
• Contract to develop a new GUI
• Integrated code and GUI will go into RAMP
Closing Remarks

- NRC working to have RADTRAN with GUI integrated into RAMP
- Keeps the code package available for NRC, DOE, and International communities
- Office of Nuclear Regulatory Research will maintain and improve RADTRAN code package under RAMP
- Developing advanced reactor guidance
- Community feedback will be important (e.g., advanced reactors)
Discussion & Questions