FRMAC Assessment
Working Group Update for Semi-Annual State/FRMAC Call

July 29, 2015
• Released updated FRMAC Assessment Manual (April 2015)
  – Added FRMAC Intervention Level (FIL) Method to assess non-FDA radionuclides
  – Removed 4-Pathway (includes plume dose) and 2-Pathway (excludes plume dose) concepts so users can select any combination of the 4 main exposure pathways. Informal, but academic discipline is required
Released update FRMAC Assessment Manual (cont.)
– Expanded worker protection methods to include the airborne plume dose
– Added new method to account for partial occupancy in the contaminated zone and for shielding protection provided by buildings
– Added information on how to assess radionuclides that can exist in non-particulate and/or multiple physical/chemical forms (e.g., iodine released from NPP).
– Tabulated FIL values in Appendix C, Table 8 for non-FDA radionuclides
– Added discussion about radionuclides that have dose coefficients for different physical/chemical forms to Appendix F.
– ...
Turbo FRMAC Tool Update

- Turbo FRMAC Updates (Turbo FRMAC 2015)
  - Added 1992 EPA PAG Manual emulation mode that pre-sets all Derived Response Level (DRL) input parameters (e.g., ICRP 30, weather model, dose pathways) to match the 1992 PAG Manual
  - Allows users to independently setup time phases (e.g., start and stop times, dose pathways)
Turbo FRMAC Tool Update

- Turbo FRMAC Updates (Cont.)
  - Enables users to assess radionuclides that can exist in non-particulate and/or multiple physical/chemical forms (e.g., iodine from NPP).
  - Can now paste radionuclide mixture data from Excel into Turbo FRMAC
  - Redesigned the radionuclide mixture interface
  - The particle size distribution of each parent radionuclide can be set independently
  - ...

<table>
<thead>
<tr>
<th>Physical Form</th>
<th>Radionuclide</th>
<th>Activity per Area</th>
<th>Integrated Air Concentration</th>
<th>Deposition Velocity</th>
<th>Particle Size Distribution</th>
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<td>P</td>
<td>137Cs</td>
<td>1.22E6</td>
<td>4.08E8</td>
<td>3.00E-3</td>
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</table>

70 parents, 190 daughters, 260 total

μCi/m² (μCi/s)/(m³/m²) (μCi/s)/m³ m/s
• Provided AS100 training May 2015 and AS200 June 2015
• Provided AS50 training at HPS Mid-Year, NREP and special session for the State of South Carolina in preparation for SE15
• Formalized the requirement for Assessment Scientist continuing/quarterly training (AS400/401) to maintain qualifications
• Conducted AS300 class July 2015