

Major Revisions in the June 2012 FRMAC Assessment Manual

The June 2012 revision of the FRMAC Assessment Manual is extensive and a specific list of all changes is impractical. The new document includes the following major changes:

1. Plume Dose Pathways (external submersion and plume inhalation) included in Public Protection Methods (Section 1).
2. Manual Sections restructured:

<u>OLD</u> 2010 Manual Section	Comment	<u>NEW</u> 2012 Manual Section
Section 1 – Plume Assessment Methods	Left as a placeholder (empty) in the 2010 version.	Section 1 – Public Protection Methods
Section 2 – Deposition Assessment Methods	Methods changed to include plume dose pathways. Renumbered to Section 1 in 2012.	Section 2 – Worker Protection Methods
Section 3 – Worker Protection Methods	Renumbered to Section 2 in 2012.	Section 3 – Ingestion Pathway Methods
Section 4 – Ingestion Pathway Methods	Renumbered to Section 3 in 2012.	Section 4 – Supplemental Methods
Section 5 – Sample Management Methods	Title changed to reflect broader scope of potential methods. Renumbered to Section 4 in 2012.	

3. New Methods:
 - Method 4.4 Determining Laboratory Analysis Detection Requirements
 - Method 4.5 Using Deposition Velocity
4. New Resuspension Factor – New FRMAC default resuspension factor.
 - Maxwell, R. and Anspaugh, L., “An Improved Model for Prediction of Resuspension” in *Health Physics*, Volume 101, pp. 722-730, December 2011.
5. Appendix A - Glossary
 - Eliminated terms not used in the Assessment Manual
 - Updated other terms to be consistent with other published guidance.
6. Appendix B – List of Variables
 - Added variables that were included in the new methods. Some renaming was required to account for inclusion of plume dose pathways.
7. Appendix C – Data Tables

Table	Comment
Table 1 – Radiological Data	Now includes nuclide specific dose coefficients that are not Time-Phase Dependent.
Table 2-2 – PAGs	Updated to include age-specific KI administration guidelines from <i>Potassium Iodide as a Thyroid</i>

	<i>Blocking Agent in Radiation Emergencies</i> , U.S. Food and Drug Administration, Washington, DC, December 2001.
NEW Table 2-3 – Default Time Phases	Added table listing default FRMAC Time Phases.
Table 2-4 – Ingestion Protective Actions	Renumbered from Table 2-3
Table 4 (series)	Updated to reflect the potential to include plume dose pathways and new DCFPAK dose coefficients.
Table 6-1 – Gamma Cloud Source Shielding Factors	Factors inverted – now ratio of exterior to interior to align with new reference used in Table 6-3.
Table 6-2 – Surface Deposition Shielding Factors for Vehicles	Factors inverted – now ratio of exterior to interior to align with new reference used in Table 6-3.
NEW Table 6-3 – Fallout Protection Factors for Buildings	Data from <i>NCR Response Planning Factors, Appendix C: Shelter</i> , LLNL-TR-512111, Lawrence Livermore National Laboratory, Livermore, CA, November 2011.
NEW Figure 6-1 – Approximate Protection Factors for locations in different Building Types	From <i>NCR Response Planning Factors, Appendix C: Shelter</i> , LLNL-TR-512111, Lawrence Livermore National Laboratory, Livermore, CA, November 2011.
Table 11 – Ingestion Pathway Default Assumptions	Included more variables used in ingestion pathway analysis.

8. Appendix D – Worksheets

All worksheets have been eliminated from the manual. Current default calculations for Methods previously having worksheets rely on numerical integration to calculate Weathering and Resuspension Parameters, making hand calculations impractical.

9. Appendix F – Supplements

Supplement 2 changed to reflect new default FRMAC resuspension model, see #4 above.

10. Many minor changes to the text were made for clarity or readability.

Future revisions of the Assessment Manual will be tracked in the document using RED text as described in the Table of Contents on page vii.