MicroSkyshine® v4

MicroSkyshine® v4 calculates the photon dose from sky scattered gamma radiation. MicroSkyshine® is used to evaluate conformance with 10 CFR 50, Appendix I ALARA requirements and 40 CFR 190 fuel cycle exposure criteria. Typical application include scattering from BWR turbine buildings and radwaste storage facilities.

MicroSkyshine®'s analytical method of solution is based on the use of "beam functions" for a point source. This method was developed for NUREG/CR-0781 (May 1979), which resulted from an NRC-sponsored effort. However, MicroSkyshine® reflects the efforts of analysts at Kansas State University, who further improved the method.

Updates to MicroSkyshine® v4 include

- Full Microsoft Windows® 10 compatibility
- Addition of ICRP-107 nuclide library
- Added benchmark cases from ANSI/ANS-6.6.1-1987 (R1998)
- Added example cases to reflect one case per each geometry type
- Development of a new External Source Tool to import sources
- Reports can be saved to Microsoft Excel and Word formats as well as html and text formats

MicroSkyshine®'s features include

- A variety of silo and wall geometries along with dimensional data in meters, centimeters, feet, or inches.
- The scattering medium is air, and the Berger method is used for calculating buildup in an overhead shield. Any one of seven materials can be selected for this purpose. Built-in library data (radionuclides, attenuation, buildup).
- Source decay can be calculated and daughters generated.
- As many as twenty energy groups (with an energy range of 100 keV to 10 MeV) may be created; total concentration entries are automatically converted to curies.
- All calculations performed by MicroSkyshine® assume that the silo wall or vertical wall is a perfect shield; that is, radiation through the walls will not be calculated.

MicroSkyshine® v4 is compatible with Microsoft Windows® 10, 8/8.1, 7, Vista®, and XP® along with Microsoft® .Net Framework Version 1.1 or newer. For exporting results to Microsoft Excel® and Word®, Microsoft Office® 2003 or newer is required. Complete installation may require up to 50MB of hard disk space.

License Type: Single User, Local Area Site, and Wide Area Site.

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