

Issuance of Regulatory Guide 4.25 “Assessment of Abnormal Radionuclide Discharges in Ground Water to the Unrestricted Area at Nuclear Power Plant Sites”

The U.S. Nuclear Regulatory Commission (NRC) has issued a new guide in the NRC’s “Regulatory Guide” series. This series was developed to describe and make available to the public information regarding methods that are acceptable to the NRC staff for implementing specific parts of the agency’s regulations, techniques that the NRC staff uses in evaluating specific issues or postulated events, and data that the NRC staff needs in its review of applications for permits and licenses.

Regulatory Guide (RG) 4.25 “Assessment of Abnormal Radionuclide Discharges in Ground Water to the Unrestricted Area at Nuclear Power Plant Sites” describes a method that the staff of the NRC considers acceptable for assessing abnormal, inadvertent radioactive releases which may result in discharges of contaminated ground water from the subsurface to the unrestricted area at commercial nuclear power plant sites. The guide endorses **American National Standards Institute/American Nuclear Society (ANSI/ANS)–2.17–2010 (R2016)** “*Evaluation of Subsurface Radionuclide Transport at Commercial Nuclear Power Plants*,” which provides such methods. The ANSI/ANS standard does not specify the use of any specific ground-water flow and transport model and it provides a graded, risk-informed approach for evaluating the effects of subsurface radionuclide transport. However the appendix to Regulatory Guide 4.25 provides a simple ground water flow and transport model that is acceptable for use with simple hydrogeologic conditions and geometry such as steady-state saturated flow in homogeneous porous sand layers. The model is in the form of a spreadsheet format to facilitate its use.

RG 4.25 and its Appendix – Simple Ground Water Model for Estimating Offsite Tritium Activity Flux (Excel Spreadsheet Model) are available at:

<https://www.nrc.gov/reading-rm/doc-collections/reg-guides/environmental-siting/rg/division-4/division-4-21.html> (please click on the “Publish Date” and “Appendix title” to view)