

ASSESSMENT OF DOSE FROM ABNORMAL RADIONUCLIDE DISCHARGES FROM GROUNDWATER

Industry Impact

Radioactive contamination of groundwater has been a pervasive issue at commercial nuclear power facilities since the 1990s. NEI's Groundwater Protection Initiative (GPI) has greatly improved utility monitoring and management of groundwater issues. As part of that initiative, sites have characterized their geology and hydrology and established monitoring protocols. The NRC issued Regulatory Guide 4.25, Assessment of Abnormal Radionuclide Discharges in Ground Water to the Unrestricted Area at Nuclear Power Plant Sites in March 2017. In it, the NRC describes an acceptable approach to determine the quantity of licensed material in abnormal discharges into the unrestricted area through ground water discharge pathway(s). Sites may require help developing their models to properly report radionuclides being discharged to unrestricted areas.

ChemStaff's Role

ChemStaff is a leading organization in helping industries respond to new regulatory guidance. ChemStaff's team of professionals have designed and managed projects, performed dose assessments, and developed models associated with the NEI GPI. ChemStaff can review existing GPI information and work with their hydrogeologic resources to obtain the information needed and identify potential ground water exposure pathways to develop the model using RG 4.25 guidance.

Value Delivered

- Expert review and/or guidance creating simple site-specific groundwater flow and transport models.
- Evaluation to determine if ground water exposure pathways exist that should be included in dose to a member of the public calculations.
- Site-specific solutions for reporting as part of Annual Radioactive Effluent Release Report and/or Annual Radiological Environmental Operating Report.
- Recommendations for potential enhancements to the site Groundwater Protection Initiative to ensure wells accurately characterize discharges to unrestricted areas.

